

Figure 1: Human POSH Coding Sequence (SEQ ID.NO:1) (part 1)

ATGGATGAATCAGCCTTGTTGGATCTTTTGGAGTGTCCGGTGTCTAGAGCGCCTTGATGCTTCTGCGA  
AGGTCTTGCCTTGCCAGCATACTTTTGGCAAGCGATGTTTGCTGGGGATCGTAGGTTCTCGAAATGAACT  
CAGATGTCCCAGTGCAGGACTCTTGTGGCTCGGGTGTGAGGAGCTTCCAGTAACATCTTGCTGGTC  
AGACTTCTGGATGGCATCAAACAGAGGCCTTGGAAACCTGGTCTGGTGGGGGAAGTGGGACCAACTGCA  
CAAATGCATTAAAGTCTCAGAGCAGCACTGTGGCTAATTGTAGCTCAAAAGATCTGAGAGCTCCAGGG  
CGGACAGCAGCCTCGGGTGCAATCCTGGAGCCCCCAGTGAGGGGTATACCTCAGTTACCATGTGCCAAA  
GCGTTATACAACATGAAGGAAAAGAGCCTGGAGACCTTAAATTACAGCAAAGGCGACATCATCATTTTGC  
GAAGACAAGTGGATGAAAATTGGTACCATGGGAAGTCAATGGAATCCATGGCTTTTCCCCCAACTT  
TGTGCAGATTATTAACCGTTACCTCAGCCCCACCTCAGTGCAAAGCACTTTATGACTTTGAAGTGAAA  
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ATGAAAATCTGGGCTGAAGGAATGCTGGCAGACAAAATAGGAATATTTCCAATTTCATATGTTGAGTTTAA  
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TCGGCAGCAGCCCAGAGCAGCACTGCCCCAAAGCACTCCGACACCAAGAAGAACACCAAAAAGCGGCCT  
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Figure 2: Human POSH Amino Acid Sequence (SEQ ID NO:2) (part 2)

MDESALLDLLECPVCLERLDASAKVLPQHTFCKRCLLGIVGSRNELRCPECRTLVGSGVEELPSNILLV  
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ALYNYEGKEPGDLKFSKGDIIILRRQVDENWYHGEVNGIHGFFPTNFVQIIKPLPQPPPQCKALYDFEVK  
DKEADKDCLPFAKDDVLTVIRRV DENWAEGMLADKIGIFPISYVEFN SAAKQLIEWDKPPVPGVDAGECS  
SAAAQSSTAPKHSDTKKNTKKRHSFTSLTMANKSSQASQNRHSMEISPPVLISSSNPTAAARI SELSGLS  
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SAAHIQTSPOAKVLLHMTGQMTVNQARNAVRTVAAHNQERPTAAVTPIQVQNAAGLSPASVGLSHHSLAS  
PQPAPLMPGSATHTAAISISRASAPLACAAAAPLTSPSITSASLEAEP SGRIVTVLPGLPTSPDSASSAC  
GNSSATKPKDKDSKKEKKLLKLLSGASTKRKPRVSPASP TLEVELGSAELPLQGA VGPELPPGGGHGRA  
GSCPVDGDGPVTTAVAGAALAQDAFHRKASSLDSAVPIAPPPRQACSS LGPVLNESRPVVCERHRVVVSY  
PPQSEAELELKEGDIVFVHKKREDGWFKGTLQRNGKTGLFPGSFVENI

Figure 3: Human POSH cDNA Sequence (SEQ ID NO:3)

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-to be continued

Figure 3: Human POSH cDNA Sequence (SEQ ID NO:3)

CTGACCAAGGTCTCTTCAGTGCACTCGCTCCCTCTCTGGCTAAGGCATGCATTAGCCACTACACAAGTCA  
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Figure 5: N terminus protein fragment of hPOSH (public gi:10432612; SEQ ID NO:5)

MDESALLDLLECPVCLERLDASAKVLPCHTFCKRCLLGIVGSRNELRCPECRTLVGSGVEELPSNILLV  
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DKEADKDCLPFAKDDVLTVIRRVDENWAEGLADKIGIFPISYVEFNAAKQLIEWDKPPVPGVDAGECS  
SAAQSSSTAPKHSSTKKNTKKRHSFTSLTMANKSSQASQNRHSMEISPPVLISSSNPTAAARISELSGLS  
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SAAHIQTSPQAKVLLHMTGQMTVNQARNVRTVAAHNQRPTAAVTPIQVQNAAGLSPASVGLSHHSLAS  
PQPAPLMPGSATHTAASISRASAPLACAAAAPLTSPSITSASLEAEPSGRIVTVLPGLPTSPDSASSAC  
GNSSATKPKDKDS

Figure 6: 3' mRNA fragment of hPOSH (public gi:7959248; SEQ ID NO:6)

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ccttttttttaaaaaaaacaatgtatatatgttctctgtgtgtgaatttaaaaaaaataacttta  
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Figure 7: C terminus protein fragment of hPOSH (public gi:7959249; SEQ ID NO:7)

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ALGTLNPPPLPPPLAATVLA STPPGATAAAAAAGMGRPMAGSTDQIAHLRPQTRPSVYVAIYPYTPRK  
EDELELRKGEMFLVFERCQDGFKGTSMTSKIGVFPGNYVAPVTRAVTNASQAKVPMSTAGQTSRGVTM  
VSPSTAGGPAQKLQGNGVAGSPSVVPAVVSAAHIQTSPOAKVLLHMTGQMTVNQARNAVRTVAHNQER  
PTAAVTPIQVQNAAGLSPASVGLSHHSLASPOAPLMPGSATHTAISISRASAPLACAAAAPLTSPSIT  
SASLEAEPGRIVTVLPGLPTSPDSASSACGNSSATKPKDKSKKEKKGLLKL LSGASTKRKPRVSPASP  
TLEVELGSAELPLQGA VGPELPPGGGHGRAGSCPVDGDGPVTTAVAGAALAQDAFHRKASSLDSAVPIAP  
PPRQACSSLGPVLNESRPVVCERHRVVVSYP PQSEAELELKEGDIVFVHKKREDGWFKGTLQRNGKTGLF  
PGSFVENI

Figure 8: Human POSH full mRNA, Annotated Sequence (part 2)

TTGTGGACTTCCAGATGGTCAGGAGATGAGCAAAGGATTGGTATGTGACTCTGATGCCCCAGCACAGTTA  
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TGGGTTTTTAATTTTCTAGAAATGAAGTGAAGTGAAGCAATGAGAAAGAAATACAGCACAACCTTGAACAA  
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CTGACCAAGGTCTCTTCAAGTCACTCGCTCCCTCTCTGGCTAAGGCATGCATTAGCCACTACAAAGTCA  
TTAGTGAAAGTGGTCTTTTATGTCTCTCCAGCAGACAGACATCAAGGATGAGTTAACCAGGAGACTACTC  
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AATTGCAATTTATCACTCTTTTCTATGTTAATAATTTGAGGACTGGATAAAAGGTTTCAAGATTAAAT  
TGATGTTCAAACCTTTGT

Figure 9: Domain Analysis of Human POSH

Domain Name	begin	end	E-value
<u>RING</u>	12	52	1.06e-08
<u>SH3</u>	137	192	2.76e-19
<u>SH3</u>	199	258	4.84e-15
<u>low complexity</u>	366	384	-
<u>low complexity</u>	390	434	-
<u>SH3</u>	448	505	2.40e-19
<u>low complexity</u>	547	563	-
<u>low complexity</u>	652	668	-
<u>low complexity</u>	705	729	-
<u>SH3</u>	832	888	1.47e-14

Figure 10: Diagram of Human POSH Nucleic Acids

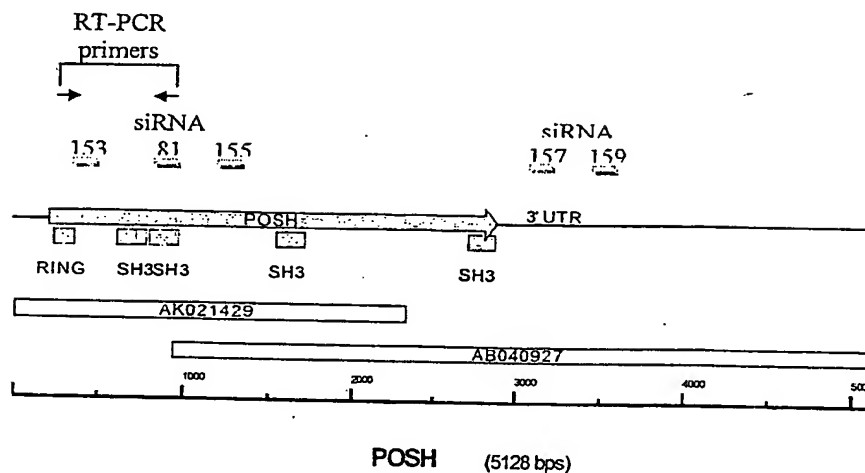


Figure 11: Reduction in Full Length POSH mRNA by siRNA Duplexes

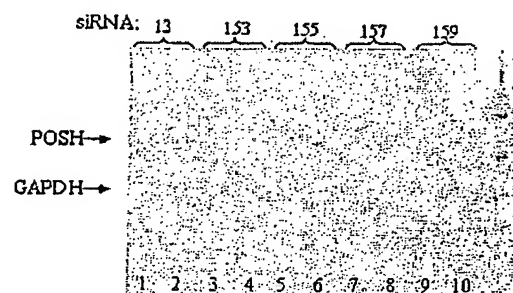




Figure 8: Human POSH full mRNA, Annotated Sequence (part 1)

--L- - gi|10432611|dbj|AK021429.1|AK021429 Homo sapiens cDNA  
FLJ11367 fis, clone HEMBA1000303, highly similar to Mus musculus  
Plenty of SH3s (POSH) mRNA

---- - gi|7959248|dbj|AB040927.1|AB040927 Homo sapiens mRNA for  
KIAA1494 protein, partial cds

----- - Both hPOSH and KIAA1495

----- - Ring Domain

----- - SH3 Domian

----- - start codon and stop codon of predicted ORF

```
CTGAGAGACACTGCGAGCGGCGAGCGCGGTGGGGCCGCATCTGCATCAGCCGCCGAGCCGCTGCGGGGC
CGCGAACAAAGAGGAGGAGCCGAGGCGCGAGAGCAAAGTCTGAAATGGATGTTACATGAGTCATTTTAAG
GGATGCACACAACATATGAACATTTCTGAAGATTTTTTCTCAGTAAAGTAGATAAAGATCGATGAATCAGC
CTTGTTGGATCTTTTGGAGTCTGGGTGCTCTGAGAGCGCTTGTATGCTTTCTGGGAGGCTCTGGCTTGC
CAGCATAGCTTTTTCAGGCGATGTTTCTGCGGATCTAGATTTCTCCAAATGAATCGATCTTCCGAGT
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TCTCAGAGCAGCACTGTGGCTAATTGTAGCTCAAAGATCTGCAGAGCTCCGAGGCGGACAGCAGCCTC
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AACCCTTACCTCAGCCCCCA
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CCCCCTCTCCTGGGTGCCACTGTCTTGCCTCCACACCAGGCGCCACCGCCGCGCTGCTGCTGCTGG
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GAGGGAGACT
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```

-to be continued

Figure 12: POSH Affects Release of VLP from Cells

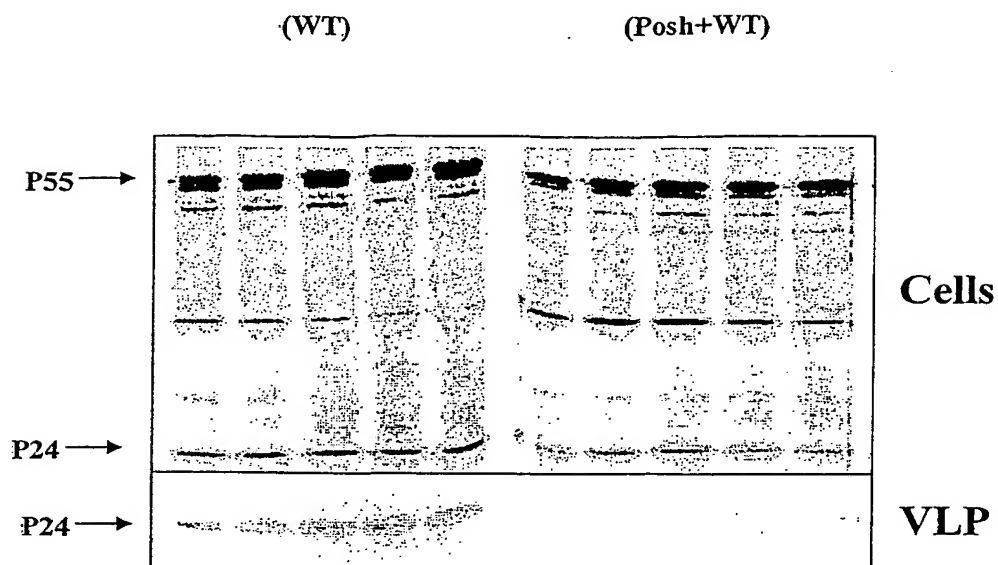
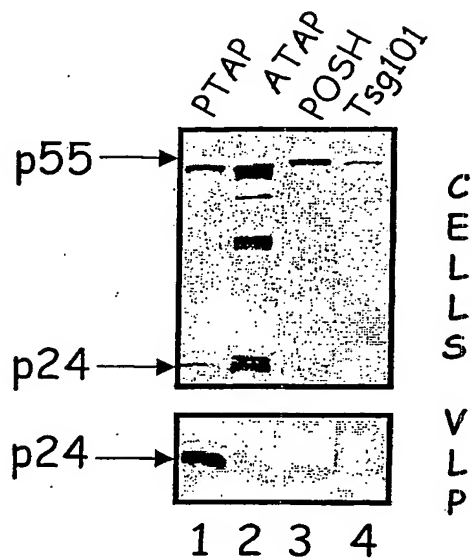


Figure 13: Release of VLP from Cells at Steady State



GGGACGCGGGCTCGGCGGGGCTGCATCTACGAGCGTGCGGGGCCGCGAAACAAAGGCGAGCAGCGGAGGC  
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Figure 15: Mouse POSH Protein sequence (Public gi: 10946922; SEQ ID NO: 9)

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GSHGRVGSCTPDGDPVAAGTAALAQDAFHRKTSSLDSAVPIAPPPRQACSSLGPVMNEARPVVCERHRV  
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Figure 16: *Drosophila melanogaster* POSH mRNA sequence (public gi:17737480;  
SEQ ID NO:10)

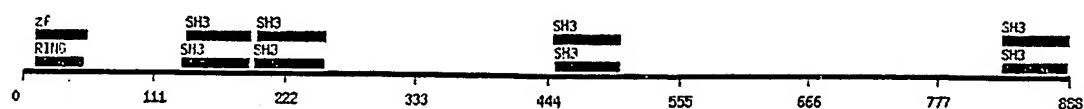
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Figure 17: *Drosophila melanogaster* POSH protein sequence (public gi:17737481; SEQ ID NO:11)

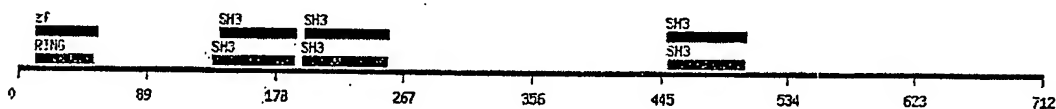
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TTKSPYCTRESRFRCIVPYPPNSDIELELHLGDIYVQRKQKNGWYKGTHARTHTGLFPASFVEPDC

Figure 18: POSH Domain Analysis

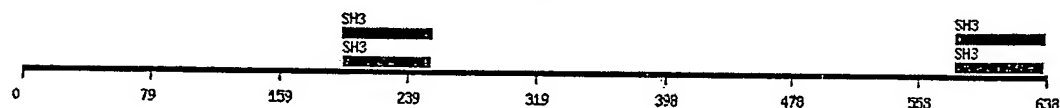
hPOSH protein sequence :



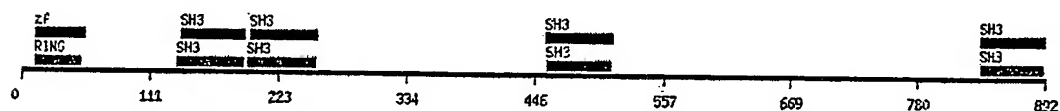
N terminus protein fragment of hPOSH (public gi:10432612):



C terminus protein fragment of hPOSH (public gi:7959249):



Mouse POSH Protein sequence (Public gi: 10946922):



Drosophila melanogaster POSH protein sequence (public gi:17737481)

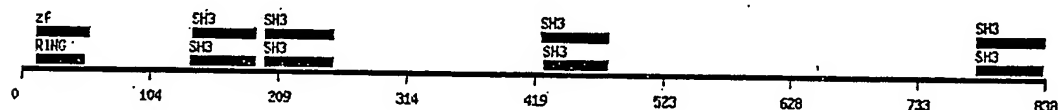




Figure 19: Human POSH has ubiquitin ligase activity

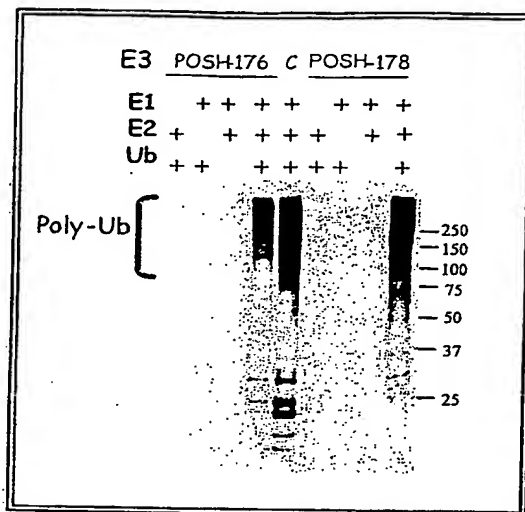


Figure 20

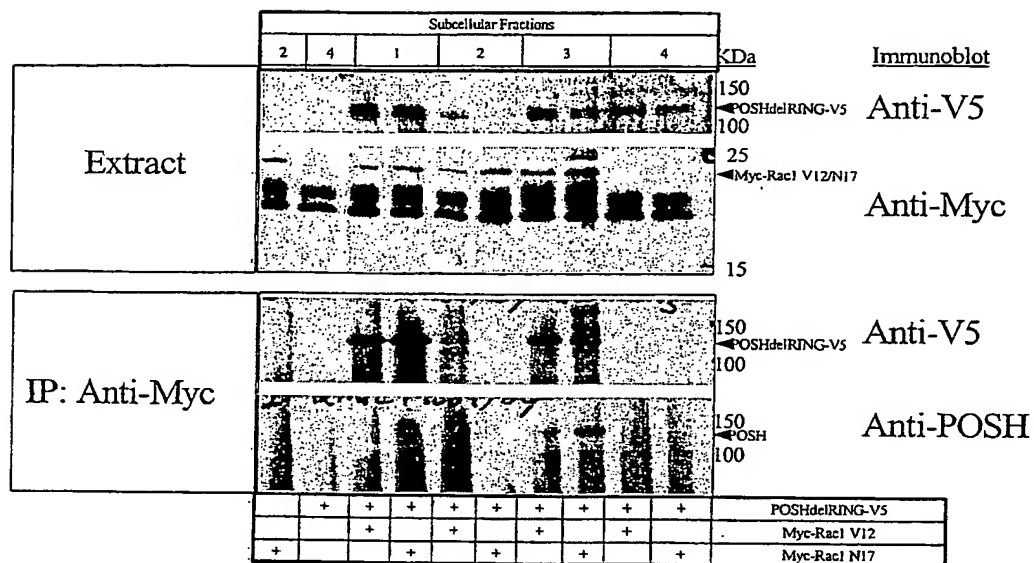


Figure 21. PLD activity in medium of transfected cells

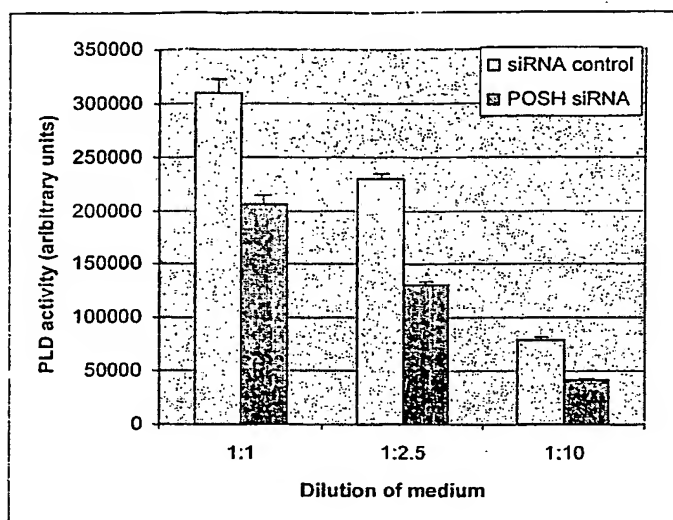


Figure 22.

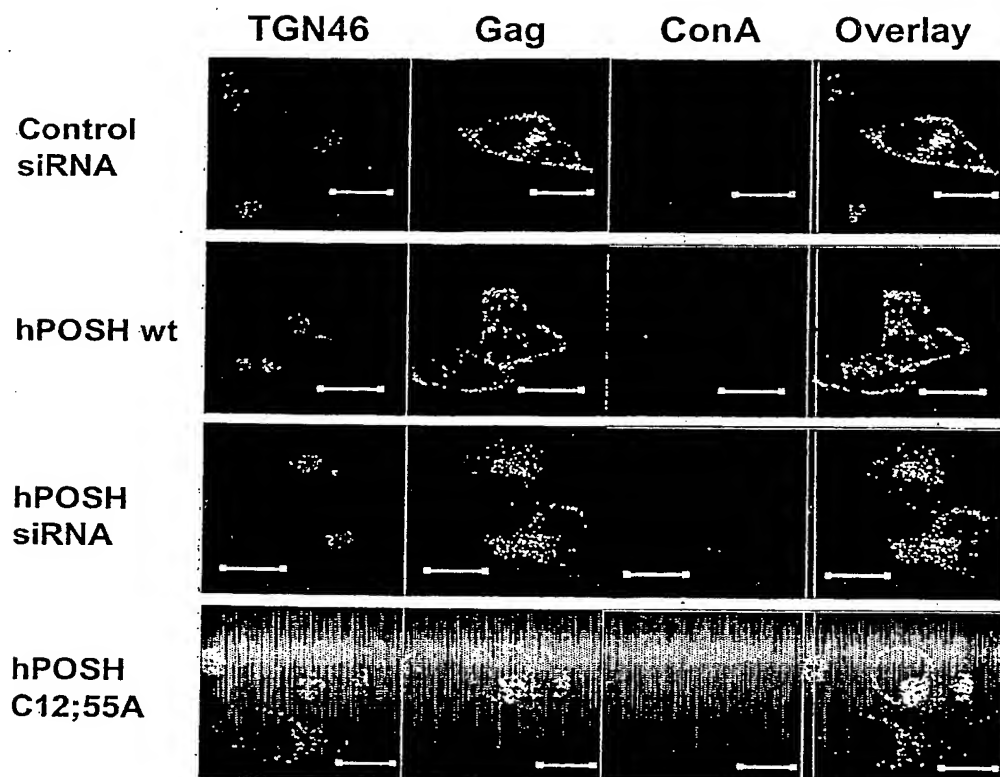


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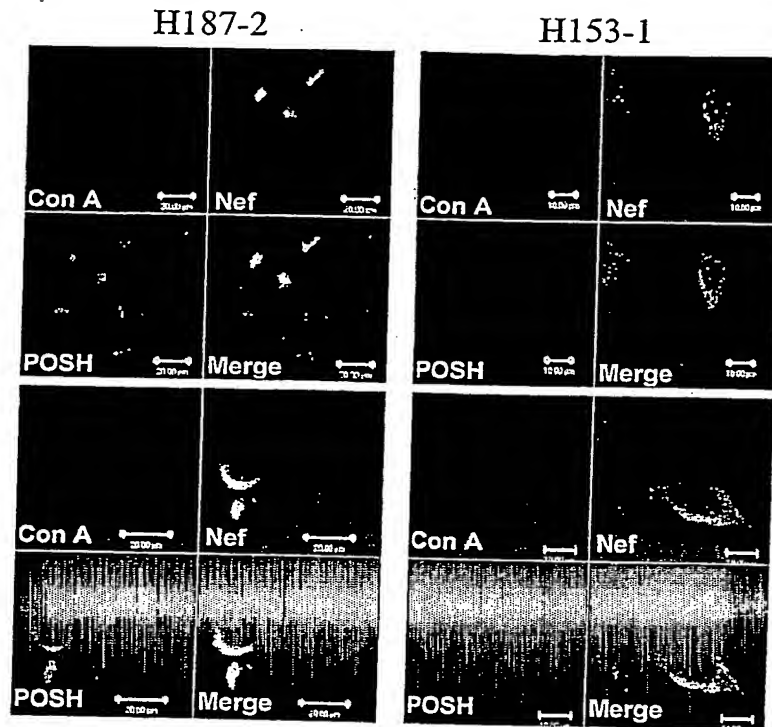


Figure 24.

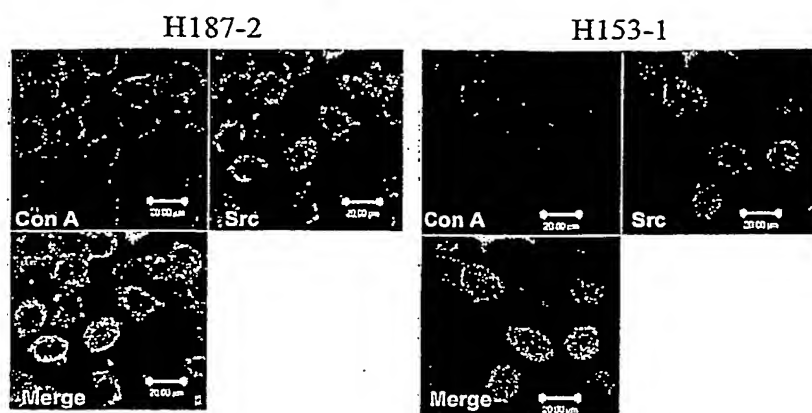
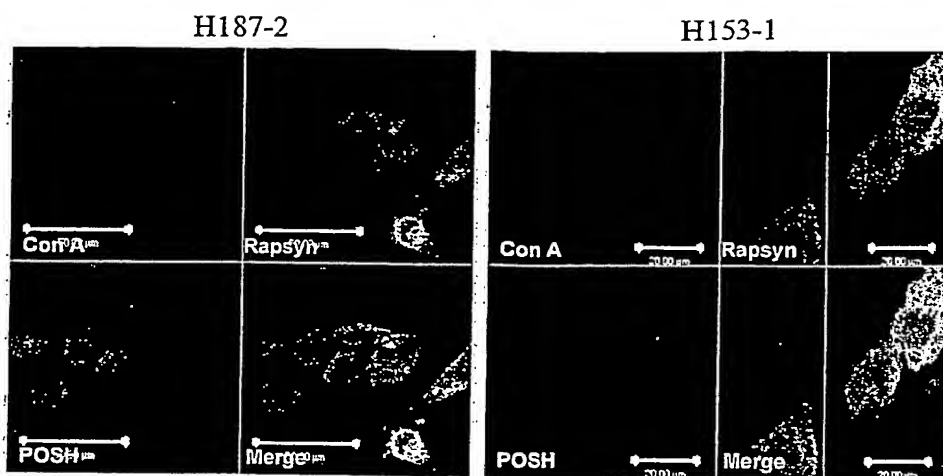


Figure 25.



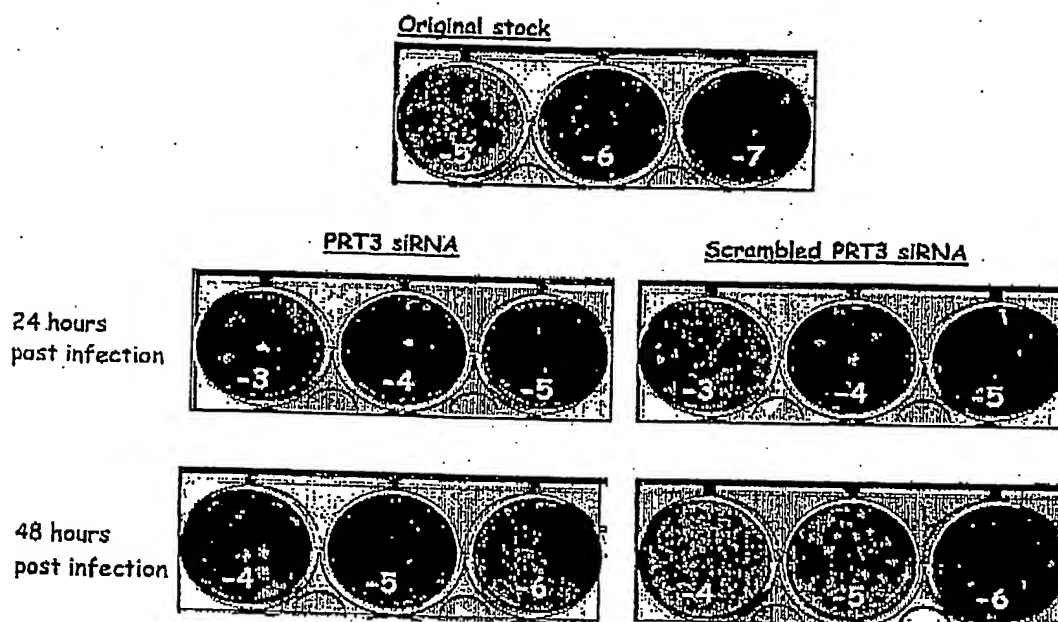


FIGURE 26



Figure 27.

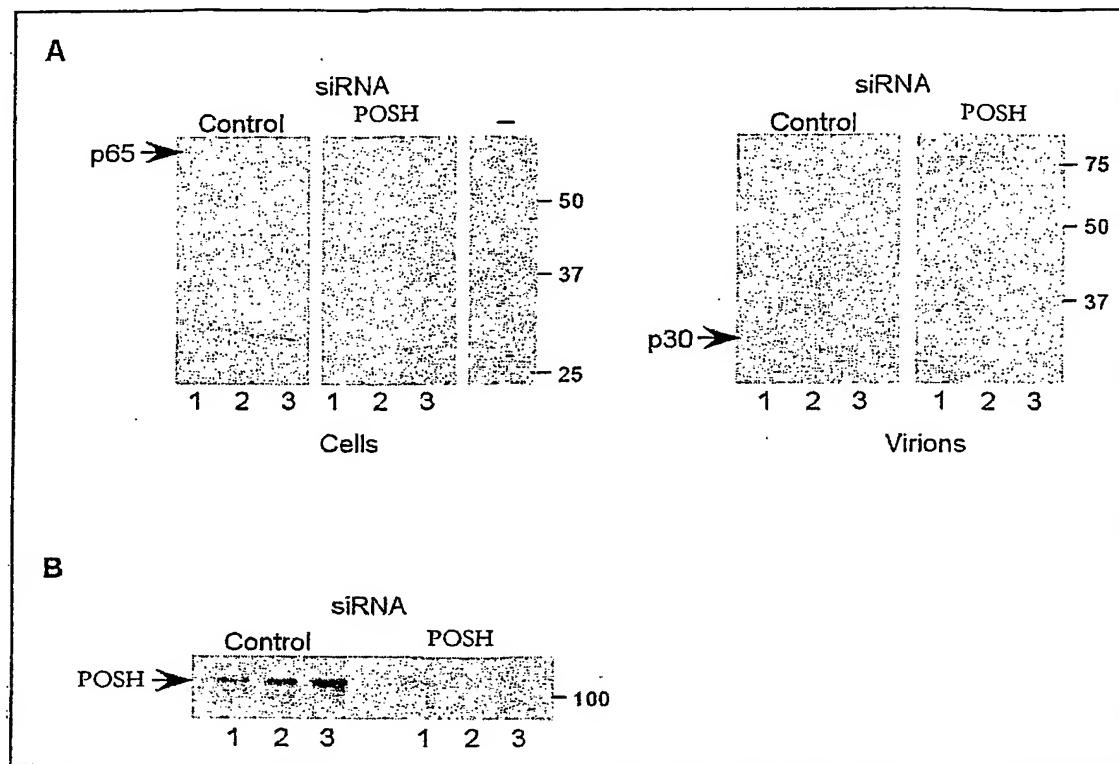


Figure 28.

SiRNA-Tsg101

SiRNA-POSH

Control

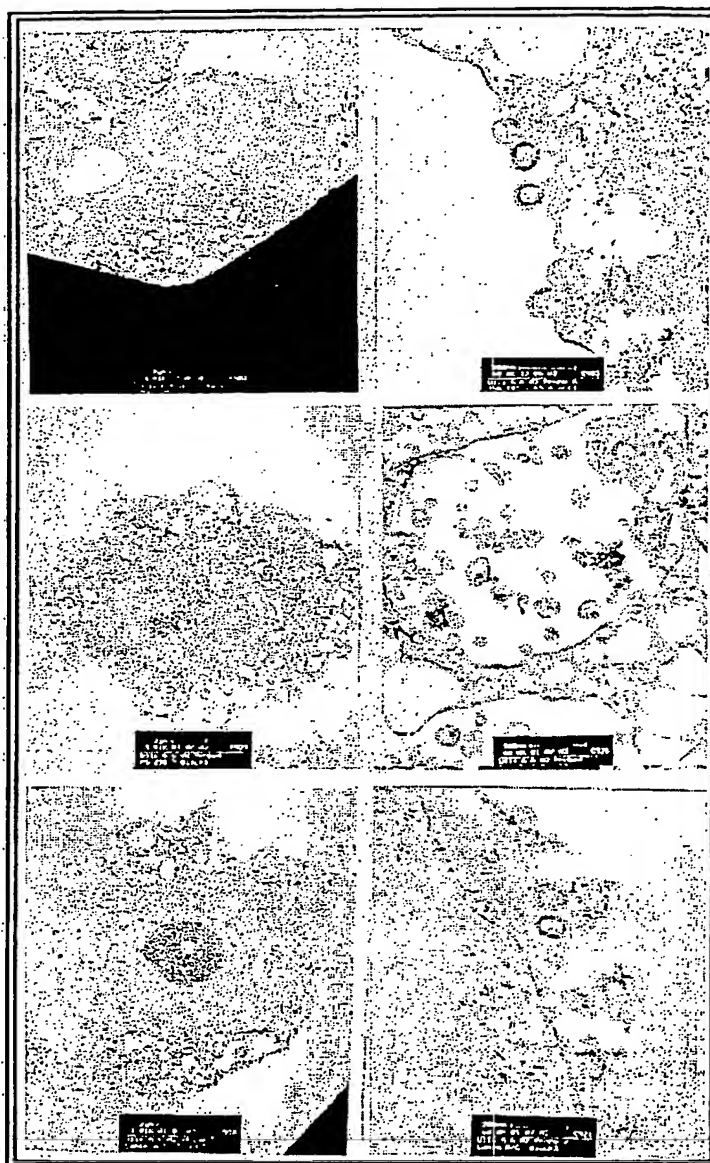
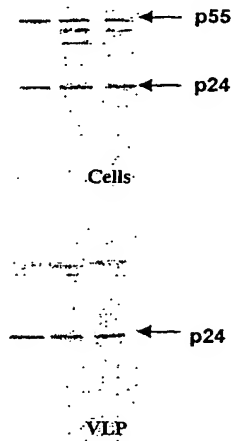


Figure 29A.

pNLenv-1 + + +  
siRNA Control POSH MSTP028



Quantification

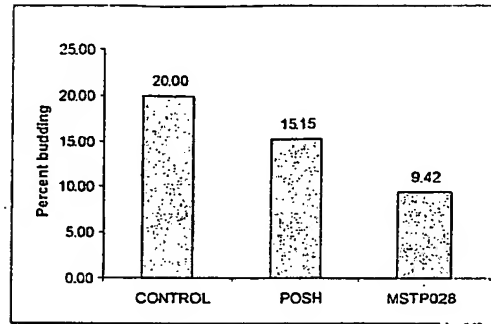


Figure 29B.

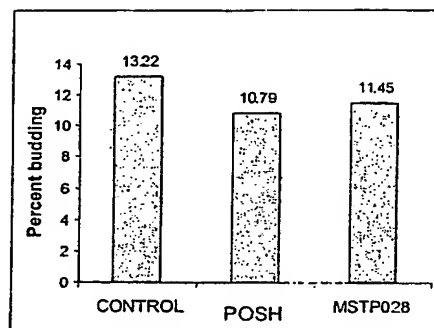
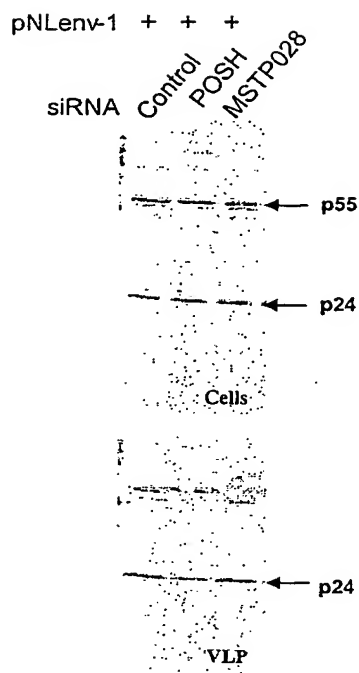
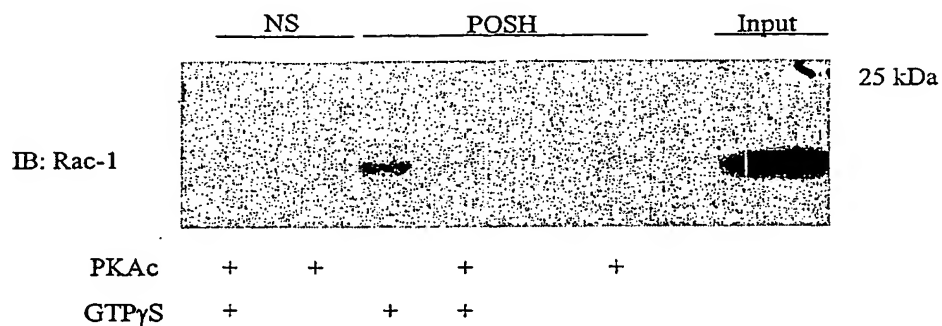


Figure 30. Putative PKA phosphorylation sites in hPOSH.

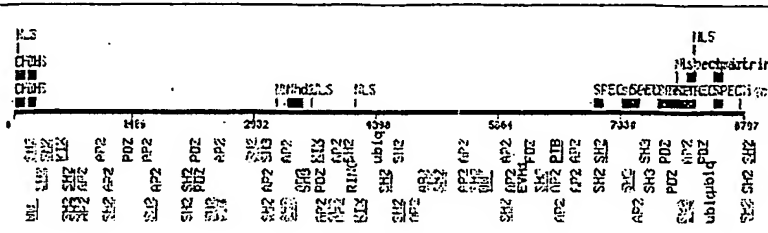

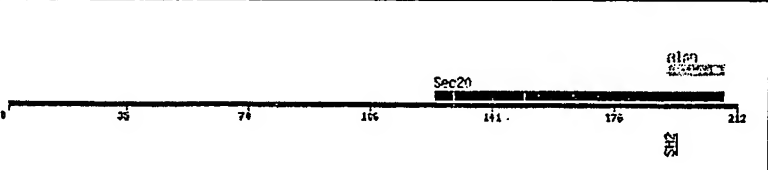
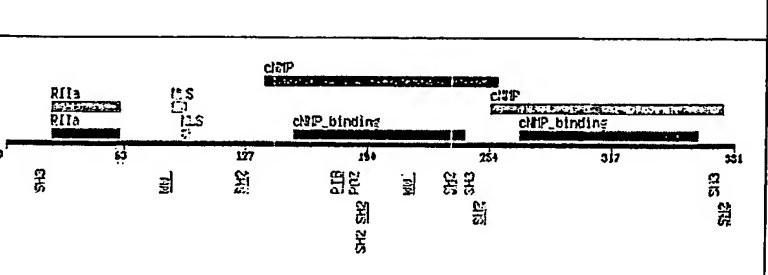
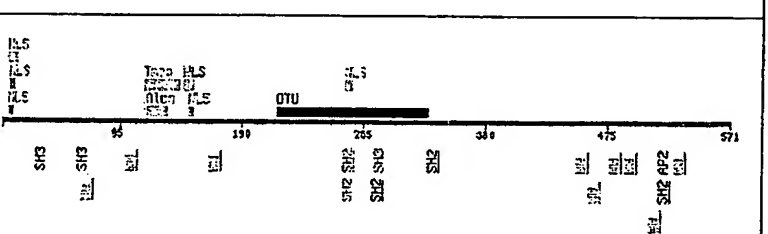
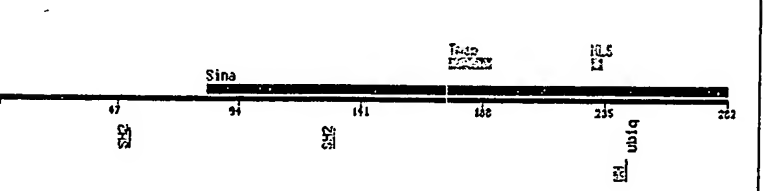
MDESALLDLLECPVCLERLDASAKVLPQHTFCKRCLLGIVGSRNELRCPECRTLVGSGVEELPSNILLV  
RLLDGIKQRPWKPGPGGGSGTNCNLRSSSTVANCSSKDLQSSQGGQQPRVQSWSPPVVRGIPQLPCAK  
ALYNYEGKEPGDLKFSKGDIIILRRQVDENWYHGEVNGIHGFFPTNFVQIIKPLPQPPPQCKALYDFEVK  
DKEADKDCLPFAKDDVLTVIRRVDENWAEGLADKIGIFPISYVEFNAAKQLIEWDKPPVPGVDAGECS  
SAAQSSSTAPKHSDT **KKN** **TK** **KRH** SFTSLTMANKSSQASQNRHSMEISPPVLISSNPTAAARISELSGL  
S  
CSAPSQVHISTTGLIVTPPPSSPVTGPFSTFSDVPYQAALGTLNPPLPPPPLLAATVLASTPPGATAA  
AAAAGMGPRPMAGSTDQIAHLRPQTRPSVYVAIYPYTPRKEDELELRKGEMFLVFERCQDGFVKGTSMHT  
SKIGVFPNGYVAPVTRAVTNASQAKVPMSTAGQTSRGVTMVSPSTAGGPAQKLQNGVAGSPSVVPAAVV  
SAAHIQTSPQAKVLLHMTGQMTVNQARNVARTVAAHNQERPTAAVTPIQVQNAAGLSPASVGLSHHSLAS  
PQPAPLMPGSATHTAISISRASAPLACAAAAPLTSPSITSASLEAEPSEGRIVTVLPGLPTSPDSASSAC  
GNSSATKPKDKSKKEKKGLLKLLSGASTKRKPRVSPPASPTLEVELGSAELPLQGAVGPELPPGGGHGRA  
GCPVDGDGPVTTAVAGAALAQDAFHRKASLDSAVPIAPPPRQACSSLGPVLNESRPVVCERHRVVVSY  
PPQSEAELELKEGDIVFVHKKREDGWFKGTLQRNGKTGLFPGSFVENI

Figure 31. Phosphorylation of hPOSH regulates binding of GTP-loaded Rac-1.



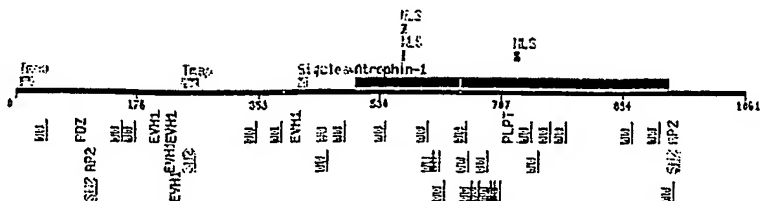
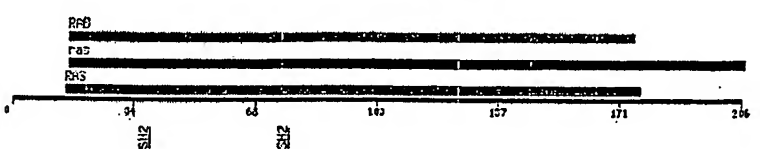
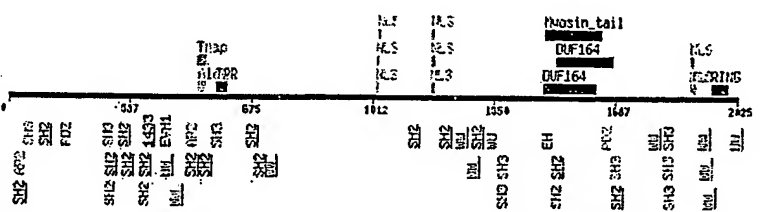
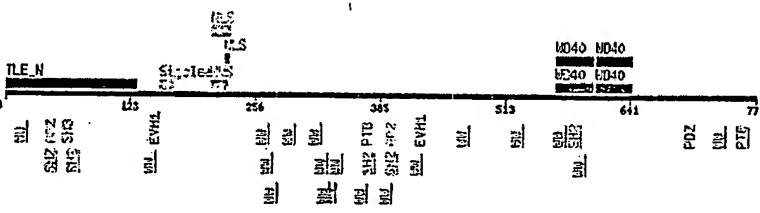
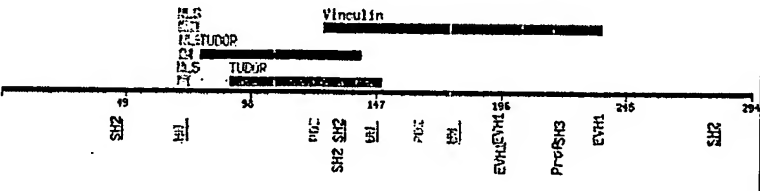
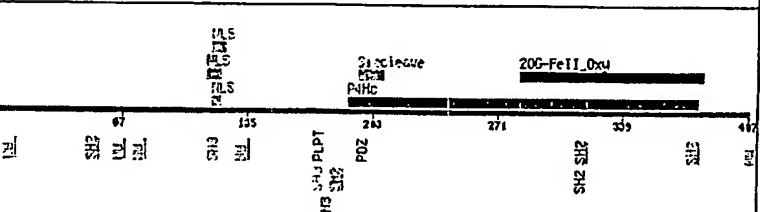


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BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
AF535142 AF535142	<u>Hs.416719</u>	<b>SYNE1</b> spectrin repeat containing, nuclear envelope 1	<u>AAN60442.1</u> 8797 aa	
M93425	<u>Hs.62</u>	<b>PTPN12</b> protein tyrosine phosphatase, non-receptor type 12	<u>292409</u> aa504>	
BC009710	<u>Hs.100651</u>	<b>GOSR2</b> golgi SNAP receptor complex member 2	<u>1690552</u> 2 <u>1690552</u> 10	
M18468 M18468 BC036285 M18468	<u>Hs.183037</u>	<b>PRKARIA</b> protein kinase, cAMP- dependent, regulatory, type I, alpha (tissue specific extinguisher 1)		
AL137509 in 3'UTR?	<u>Hs.184029</u>	<b>DKFZp761A052</b> hypothetical protein	<u>AAH09917</u>	
BC013082 U76247	<u>Hs.295923</u>	<b>SIAH1</b> seven in absentia homolog 1 (Drosophila)	<u>AAC51907</u>	
BC032851	<u>Hs.3144</u>	<b>CBLB</b> Cas- Br-M (murine) ecotropic		



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BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
		retroviral transforming sequence b		
BC006358 -bp 2026 bp 1561 bp1564 bp1562 bp1561 bp1564	<u>Hs.66048</u>	<b>VCY2IP1</b> VCY2 interacting protein 1	<u>21739763</u>	
BC039858	<u>Hs.6906</u>	<b>RALA v-ral</b> simian leukemia viral oncogene homolog A (ras related)	<u>24980847</u> aa1>	
D83077	<u>Hs.118174</u>	<b>TTC3</b> tetrapeptide repeat domain 3	<u>1304132</u> aa1027 aa1030	
M99435	<u>Hs.28935</u>	<b>TLE1</b> transducin-like enhancer of split 1 (E(sp1) homolog, Drosophila)	<u>307510</u>	
U18423	<u>Hs.288986</u>	<b>SMN1</b> survival of motor neuron 1, telomeric	<u>624186</u>	
BC001723, AJ310544	<u>Hs.324277</u>	<b>EGLN2</b> egl nine homolog 2 (C. elegans)	<u>14547148</u>	
BC000386	<u>Hs.58189</u>	<b>EIF3S3</b> eukaryotic translation		

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BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
		initiation factor 3, subunit 3 gamma, 40kDa		
AF055460	<a href="#">Hs.155223</a>	STC2 stanniocalcin 2	<a href="#">AAC27036</a>	
BC013876	<a href="#">Hs.278898</a>	OPTN optineurin	<a href="#">AAH13876</a>	
XM_208944 AK094466	<a href="#">Hs.420088</a>	Unnamed protein product	<a href="#">XP_208944</a>	
X61709	<a href="#">Hs.77961</a>	HLA-B major histocompatibility complex, class I, B	<a href="#">32182</a>	
M88108	<a href="#">Hs.119537</a>	KHDRBS1 KH domain containing, RNA binding, signal transduction associated 1	<a href="#">189500</a>	
K03195/ NM_006516	<a href="#">Hs.169902</a>	SLC2A1 solute carrier family 2 (facilitated glucose transporter),	<a href="#">5730051</a>	

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BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
AL137493	<a href="#">Hs.35945</a>	DKFZp434B1231 hypothetical protein DKFZp434B1231	<a href="#">6808117</a>	
L06425	<a href="#">Hs.181244</a>	HLA-A	<a href="#">575249</a>	
BC008345	<a href="#">Hs.301512</a>	NUMA1 nuclear mitotic apparatus protein 1	<a href="#">14249928</a> 963aa <a href="#">35119</a> 2115aa	
AF077202 AF077202	<a href="#">Hs.397853</a>	HSPC016 hypothetical protein HSPC016	<a href="#">1265453</a> 7 64aa	
BC000449	<a href="#">Hs.183704</a>	UBC		
D26121	<a href="#">Hs.169303</a>	ZFM1 protein alternatively spliced product domain A, B and G		
AF077952	<a href="#">Hs.105779</a>	PIASY protein inhibitor of activated STAT protein PIASy	<a href="#">3643111</a>	

BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
BC007034	<u>Hs.118786</u>	MT2A metallothionein 2A	<u>13937857</u>	
AF293026	<u>Hs.32587</u>	SRA1 steroid receptor RNA activator 1	<u>9930614</u>	
X66899	<u>Hs.129953</u>	EWSR1 Ewing sarcoma breakpoint region 1		Synaptophysinx4; Transcription factor IIA; zinc finger x4; NLSx3,
AF035528	<u>Hs.153863</u>	MADH6 MAD, mothers against decapentaplegic homolog 6 (Drosophila)	<u>2736316</u>	
AF441770	<u>Hs.16411</u>	THOC2 THO complex 2	<u>AAM28436</u>	
Y09723	<u>Hs.33532</u>	ZNF151 zinc finger protein 151 (pHZ-67)	<u>2230871</u>	

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BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
BC012726	<u>Hs.69331</u>	<b>DDX31</b> DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 31	<u>7505907</u>	
NM_032958	<u>Hs.373569</u>	<b>POLR2J2</b> DNA directed RNA polymerase II polypeptide J- related gene		
AF068235.1	<u>Hs.433759</u>	<b>BANF1</b> barrier to autointegratio n factor 1	<u>3002951</u>	
BC014967.1	<u>Hs.5637</u>	<b>CBX4</b> chromobox homolog 4	<u>4502603</u> aa319	

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Figure 33.

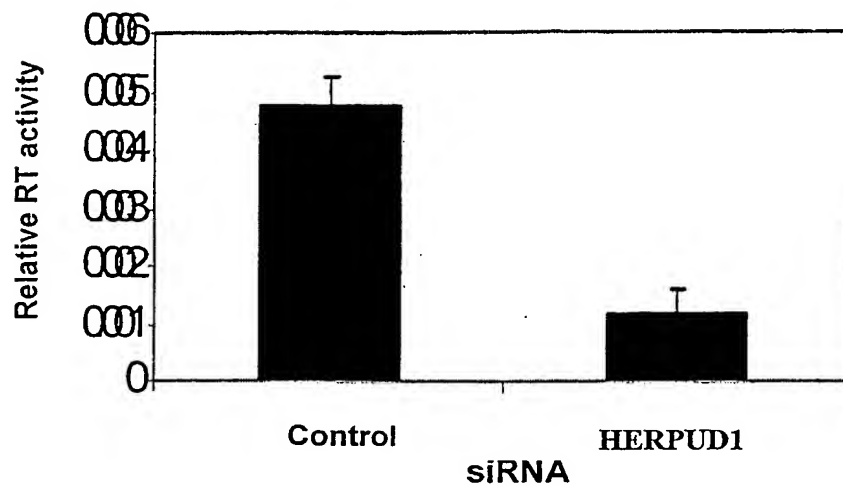
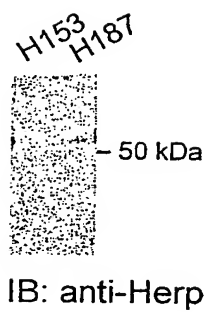
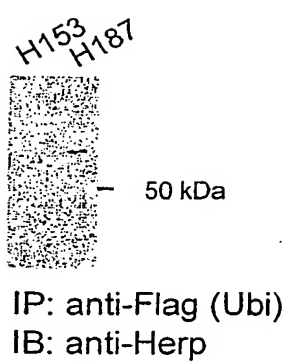


Figure 34A.

A



B



10/547845

Figure 34B.

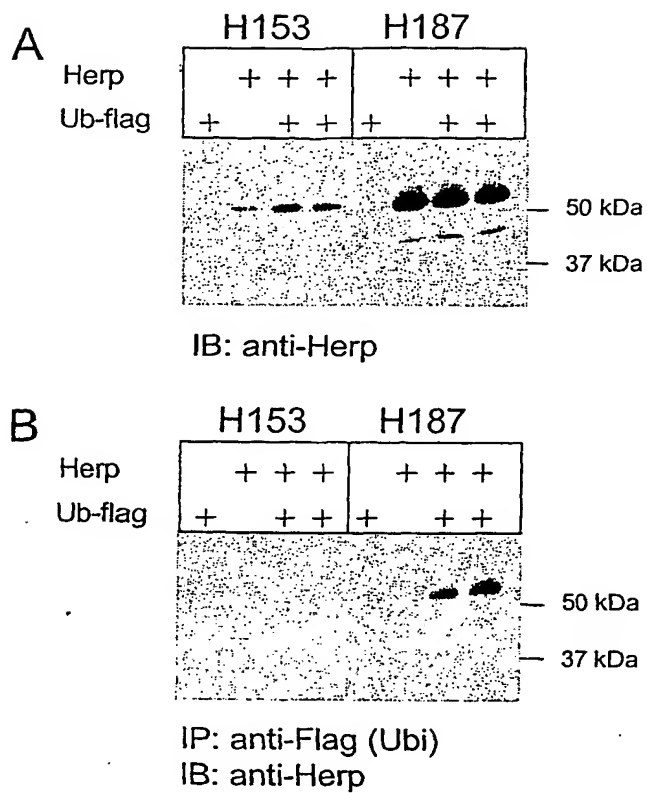
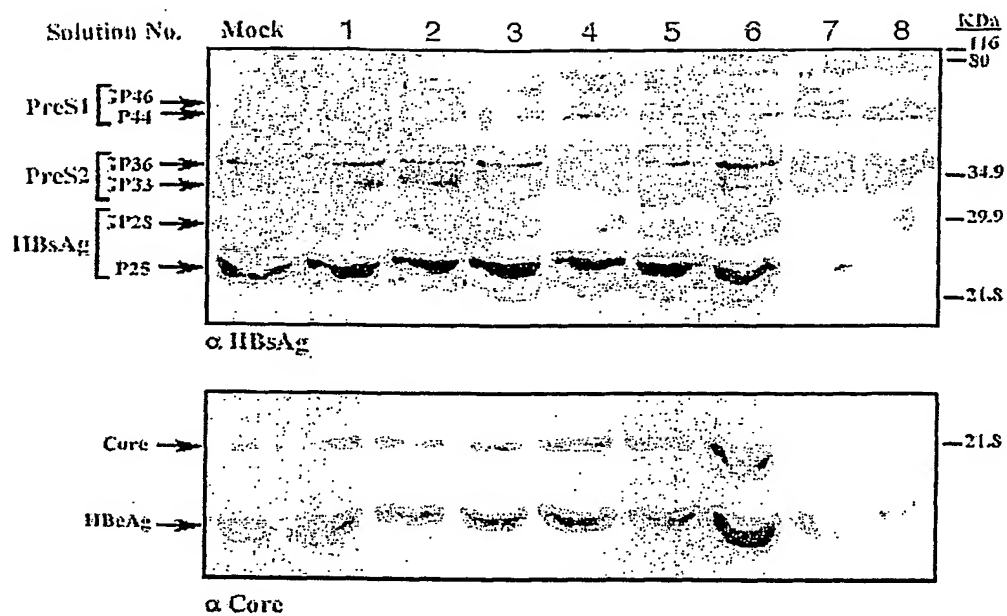




Figure 35.



## FIGURE 36

10/547845

Unigene Name: Arf1 Unigene ID: Hs.286221

Human Arf1 mRNA sequence - var1 (public gi: 3360490) (SEQ ID NO: 325)

GCAAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCTTCCACCTGTCCA  
CAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTGGCAAAAAGAAATGCGCATCCTCAT  
GTTGGGCTGGATGCTGCAGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACC  
ATTCCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGG  
GTGGCCAGGACAAGATCCGGCCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGT  
GGACAGCAATGACAGAGAGCGTGTGAACGAGGCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAG  
CTCCGGGATGCTGTCTCTCTGGTGTTCGCCAACAAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGA  
TCACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAAGTGGTACATTCAGGCCACCTGCGCCACCAG  
CGGCCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAAGAAGTGAACCGACCC  
CCCTCCCTCTCACTCTCTTGGCCCTCTGCTTTACTCTCATGTGGCAACGTCGGGCTCGTGGTGTGAGTG  
CCAGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGTCATCGCACCGTGTGTAAATGTGGCAGACCGAGCCT  
GCGGCCAGGCTTTTTATTATTAAGTAAATAGTTTTTGTTCATGAGGCAGTTTCTGGTACTCCTATGCA  
ATATTACTCAGCTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCACTGCTGAGAGGGGATGTAGG  
CCCATGGGCACCTGGCCTCCAGGAGTCTGTGTGTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGT  
GTTGAAATCCATTTTGGTGGTGGTGTGTTTAAACCAAACTCAGTGCATTTTTTAAATAGTTAAGAATCCA  
AGTCGAGAACACTTGAACACACAGAAGGGAGACCCGCTAGCATAGATTTGCAGTTACGGCTTGGATGC  
CAGTCGCCAGCCAGCTGTTCCTCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCT  
GCATGGTCACAGTAGAGATCCCGCAACTCGCTGTCTTGGGTCACTTCCATAGCCATGTGCT  
TGTCCTGTGCTCCACGTTTCCAGGGGCCAGGCTGGGAGCCACAGCCACCCCACTATGCGCGAGGCC  
GCCCTACCCACCTTCAGGCAGCCTATGGGACGCGAGGCCCATCTGTCCCTCGGTGCGCGTGTGGCCAGA  
GTGGGTCCGTGCTCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGCTCACCAGCA  
GGAGCGGTGCAAGCCGGGAGGCGGTCCACCTAGACCCACAGCCCTCGGGAGCACCCACCTCTGTGT  
GTGATGTAGTCTTCTCTCCCTCAGCCTGCAAGGGTCCGATTGGCCATCGAAAAAGACAACCTCTACTTTT  
TTCTTTGTATTTTGATAAACAAGCTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAACCTCAGAAGTGT  
CTATTTGGTGTGCTGGAACCTCTTACTGCTTTCAATACAGATTAGTAATCAAAAAAAAAAAAAAAAAA  
AAAAAA

Human Arf1 mRNA sequence - var2 (public gi: 30583624) (SEQ ID NO: 326)

ATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTGGCAAAAAGAAATGCGCATCCTCATGGTGG  
GCCTGGATGCTGCAGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATTC  
CACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGTGG  
CAGGACAAGATCCGGCCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGACA  
GCAATGACAGAGAGCGTGTGAACGAGGCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCTCCG  
GGATGCTGTCTCTCTGGTGTTCGCCAACAAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCACA  
GACAAGCTGGGGCTGCACTCACTACGCCACAGGAAGTGGTACATTAGGCCACCTGCGCCACACAGCGGCC  
ACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAAGAAGTAG

Human Arf1 mRNA sequence - var3 (public gi: 34527605) (SEQ ID NO: 327)

AAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCTTCCACCTGTCCACA  
AGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTGGCAAAAAGAAATGCGCATCCTCATGG  
TGGGCTGGATGCTGCAGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCAT  
TCCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGT  
GGCCAGGACAAGATCCGGCCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGG  
ACAGCAATGACAGAGAGCGTGTGAACGAGGCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCT  
CCGGGATGCTGTCTCTCTGGTGTTCGCCAACAAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATC  
ACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAAGTGGTACATTCAGGCCACCTGTGCCACCAGCG  
GCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAAGAAGTGAACGCGACCCCC  
CTCCCTCTCACTCTCTTGGCCCTCTGCTTTACTCTCATGTGGCAACGTCGGCTCGTGGTGTGAGTGCC  
AGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGTCATCGCACCGTGTGTAAATGTGGCAGACGCGACCTGC  
GGCCAGGCTTTTTATTATTAAGTAAATAGTTTTTGTTCATGAGGCAGTTTCTGGTACTCCTATGCAAT  
ATTACTCAGCTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCACTGCTGAGAGGGGATGTAGGCCC  
ATGGGCACCTGGCCTCCAGGAGTCTGTGTGTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTT  
GAAATCCATTTTGGTGGTGGTGTGTTTAAACCAAACTCAGTGCATTTTTTAAATAGTTAAGAATCCAAGT  
CGAGAACACTTGAACACACAGAAGGGAGACCCGCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAG  
TCGCCAGCCAGCTGTTCCTCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCA  
TGGTCACAGTAGAGATCCCGCAACTCGCTGTCTTGGGTCACTTCCATAGCCATGTGCTGTG

Figure 36 part - 1

CCCTGTGCTCCCACGGTTCACAGGGGCCAGGCTGGGAGCCACAGCCACCCCACTATGCCGACAGCCGCC  
CTACCCACCTTCAGGCAGCCTATGGGACGACAGGCCCCATCTGTCCCTCGGTGCGCGTGTGGCCAGAGTG  
GGTCCGTGCTCCCCAACACTCGTGCTCGCTCAGACACTTCGGCAGGATGTCTGGGGCCCTCACCAGCAGGA  
GCGCGTGCAAGCCGGGACAGGCGGTCCACCTAGACCCACAGCCCTCGGGAGCACCCACCTCTGTGTGTG  
ATGTAGCTTTCTCTCCCTCAGCCTGCAAGGTCGGATTGSCATCGAAAAAGACAACCTCTACTTTTTTC  
TTTTGTATTTTGATAAACTGAAGCTGGAGCTGTAAATTTATCTTGGGGAAACCTCAGAACTGGTCTA  
TTTGGTGTGCTGGAACCTCTTACTGCTTTCAATACAGATTAGTAATCAACTGTTTTGTATACTTGTGTTT  
CAGTTTTCATTTGACAAAACAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACCTATT

Human Arf1 mRNA sequence - var4 (public gi: 6995997) (SEQ ID NO: 328)

GCAAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCTTCCACCTGTCCA  
CAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTTGCCAAAAGAAATGCGCATCCTCAT  
GGTGGGCTGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACC  
ATTCACCATAGGCTTCAACGTGGAACCGTGGAGTACAAGAATCAGCTTCACTGTGTGGGACGTGG  
GTGGCCAGGACAAGATCCGGCCCTGTGGCGCCACTACTTCCAGAAACACACAAGGCCTGATCTTCGTGGT  
GGACAGCAATGACAGAGAGCGTGTGAACGAGGCCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAG  
CTCCGGGATGCTGTCTCTCTGGTGTTCGCCAACAAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGA  
TCACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACCTGGTACATTACAGGCCACCTGCGCCACCAG  
CGGCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACAGAAAGTGAACGCGACCC  
CCCTCCCTCTCACTCCTCTTGCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTG  
CCAGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGTGTAAATGTGGCAGACGCAGCCT  
GCGGCCAGGCTTTTTTATTTAATGTAAATAGTTTTTGTTCCTAATGAGGCAGTTTCTGGTACTCCTATGCA  
ATATTACTCAGCTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGTCTGAGAGGGGATGTAGG  
CCCATGGGCACCTGGCCTCCAGGAGTCTGCTGTGTGGGAGAGCCGGCCACGCCCTTGGCTTAGAGCTGTG  
TTGAAATCCATTTTGGTGGTTGGTTTTAACCCAAACTCAGTGCATTTTTTAAATAGTTAAGAATCCAAG  
TCGAGAACACTTGAACACACAGAAGGGAGACCCGCCCTAGCATAGATTGTCAGTTACGGCCTGGATGCCA  
GTCGCCAGCCAGCTGTTCCTCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGC  
ATGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCTTGGGTCAACCTGCATTCCATAGCCATGTGCTTG  
TCCCTGTGCTCCACGGTTCCAGGGGCCAGGCTGGGAGCCACAGCCACCCCACTATGCCGACAGGCCGC  
CCTACCCACCTTCAGGCAGCCTATGGGACGACGCCCCATCTGTCCCTCGGTCCGCGTGTGGCCAGAGTG  
GTCCGTGCTCCCAACACTCGTGTCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGAG  
CGCGTGCAAGCCGGGACAGGCGGTCCACCTAGACCCACAGCCCTCGGGAGCACCCACCTCTGTGTGTGA  
TGAGCTTTCTCTCCCTCAGCCTGCAAGGTCGGATTGTCCATCGAAAAAGACAACCTCTACTTTTTTCT  
TTTGTATTTTGATAAACTGAAGCTGGAGCTGTAAATTTATCTTGGGGAAACCTCAGAACTGGTCTAT  
TTGGTGTGCTAGGAACCTCTTACTGCTTCAATACAGATTAGTAATCAACTGTTTTGTATACTTGTGTTT  
CAGTTTTCATTTGACAAAACAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACCTATT

Human Arf1 mRNA sequence - var5 (public gi: 7020834) (SEQ ID NO: 329)

CCTTACCCGGCGTGCCCCGCGCCGAGGCGCTGACGTGGCCGCCGTGAGAGCCGCCATCTTGTGGGAGC  
AAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCTTCCACCTGTCCACA  
AGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAGAAATGCGCATCCTCATGG  
TGGGCTCGATGCTGACAGGAAGACCAGGATCCTCTCAAGCTTAAGCTGGGTGAGATCGTGACCACCAT  
TCCCACCATAGGCTTCAACGTGGAACCGTGGAGTACAAGAATCAGCTTCACTGTGTGGGACGTGGGT  
GGCCAGGACAAGATCCGGCCCCCTGTGGCCCACTACTTCCAGAAACACACAAGGCCTGATCTTCGTGGTGG  
ACAGCAATGACAGAGAGCGTGTGAACGAGGCCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCT  
CCGGGATGCTGTCTCTCTGGTGTTCGCCAACAAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATC  
ACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACCTGGTACATTACAGCCACCTGCGCCACCAGCG  
GCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACAGAAAGTGAACGCGACCCCC  
CTCCCTCTCACTCCTCTTGCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTGCC  
AGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGTGTAAATGTGGCAGACGCAGCCTGC  
GGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTCCTAATGAGGCAGTTTCTGGTACTCCTATGCAAT  
ATTACTCAGCTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGTCTGAGAGGGGATGTAGGCC  
CATGGGCACCTGGCCTCCAGGAGTCTGCTGTGTGGGAGAGCCGCCACGCCCTTGGCTTTAGAGCTGTGT  
TGAAATCCATTTTGGTGGTTGGTTTTAACCCAAACTCAGTGCATTTTTTAAATAGTTAAGAATCCAAG  
TCGAGAACACTTGAACACACAGAAGGGAGACCCGCCCTAGCATAGATTGTCAGTTACGGCCTGGATGCCA  
GTCGCCAGCCAGCTGTTCCTCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGC  
ATGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCTTGGGTCAACCTGCATTCCATAGCCATGTGCTTG  
TCCCTGTGCTCCACGGTTCCAGGGGCCAGGCTGGGAGCCCAAGCCACCCCACTATGCCGACAGCCGC  
CCTACCCACCTTCAGGCAGCCTATGGGACGACGAGGCCCCATCTGTCCCTCGGTGCGCGTGTGGCCAGAGT  
GGGTCCGTGCTCCCAACACTCGTGTCTGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGG  
AGCGCGTGCAAGCCGGGACAGGCGGTCCACCTAGACCCACAGCCCTCGGGAGCACCCACCTCTGTGTGT  
GATGTAGCTTTCTCTCCCTCAGCCTGCAAGGTCGGATTGSCATCGAAAAAGACAACCTCTACTTTTTT

Figure 36 part - 2

CTTTTGTATTTTGATAAACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGTCT  
ATTTGGTGTCTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCACTGTTTTGTATACTTGT  
TCAGTTTTTCATTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACATTAAAAA  
AAAAAAAAAAAAAAAAAAAA

Human Arf1 mRNA sequence - var6 (public gi: 10435849) (SEQ ID NO: 330)

AGCTCAGTGCCAGCATGTCTGTGGTGAAGTGTAGTTGAGGAAAGTGAAGTGGCAAACTGAGTATCACC  
CTCTCTTCTGGGTTCTTGCCACTCCCCTGAAAACAGGGTAGCATTGTACATCAGATAGCTCCGCTAC  
GTGTGCGCTGACCATGCTGAGATGGGCACTGTGGACTCAGCCTCTGGTCATTGCTGGAACAGCGGCCCTC  
CATGTGAGGTACAGGGGAACGCACTGCTAGCAGATGGTTGGGATGTGGACACTCGTCCTGCCCTCTGGC  
TTGGTGTCTGTCCATCGCACAGTCATTGCTGTTTAGCATGCATGGGAGAGAGTGAAGCACAAAGGCCCA  
GGCCCCCTGGGAGTGCCTGCCCTCAATTTGGAAGAGCCCTTGGGCACAGCATAGGCGCCTGGCAGAATTGG  
ACTGGGCCATGATCCAGGGCATTGGGACCTCACCTAGGAGTTGGGGTCTGGTCAGAAGCCCTGTGGAGA  
CAGGCTCTCCCCTGTGGGCACCAAACTGACCTCAAACTGCTGGTTCTTTGGCCCTGGGGACAGGGCTGGT  
TGAAGTACTCTCCCGGCACTGTACCTGCAGGGAGAGGTGGGGGTAGGGGTGCTGTGTTTCTTAGCTGT  
TCCTCGTTGCAGTGTAAATCCCTGCAGGTTCTTATTCTCAGCTTGTGTTGTGAGTTTTCAGTGTGGG  
GCTAATGTGGGTTTGCGTTTTTGGTCTTGGTTTTCCAGTGGCCAGTCCATCAGCCACTGCAGTGGGGC  
CAGGTAGAGGCCAACTGCACCTGCCTGCCAGAGTAGAAATACTGGTAGGCCCCAGGCTCTGCTGCCCT  
TCCATGTCTTGTGTAAGCATCCATGGACAAAGCTGACTCAGGGGTGTGCACAGCTGCAGGGAGGCCAG  
GAAACAGGGGTTTTATTCTAGAGGGCTTGTGCTCAGTGACAGACCAGAGTCCCATCACTGAGAGAGCAG  
GGCTGGGGCAGCACAAAGGACTGGATAGCATTGGCCATGATGCCATGTGCACAGCCAGTGCAGTCCCTC  
ATTGTAGCTGTGGTCAGAGGTCATGAGACACTGCCTTCAGCAGCCCTGGGAGTCCACCTGGTGTGTGCTT  
AGAGCTGTGCATCTGCAGATTTGAGAAGGACTTACGTTTGGTGAGGTGCTTTGAAGTAACACTTCACAAA  
TACCAAGAAGCAAGAAATACACAAATAAGCAGGTAATGGTTCTTTGGTGTTTACATTAGCTAGTGGGCAA  
CGGTTCTTTGGTGTTCACATTAGCTATAGTCCAGAACTCAGTCCATGAGGTGGAATCACAAAAATGGAA  
TTCAATTTCTGGCTGTGAGTACACAACTGATTAAAGATATCACCTGAAATTTAAGCTGACAAACAGTGA  
TCTAAACTGAATTTCACTGATTGCCCCACCTGAAAGTCAGACCTGATAGATAATGCCCTCCCTTAACCTCA  
AGGCCAGCAGCAGATGTGTTAGAGGGGACCCTTGTGCCTCGCAGCCCTCATCTCCTAATGGCTGTGGGGT  
CACTGTGTCGAGTTGTAATGCCTAATGAGCTCCTCTAAAAACATCCTGAAACTTGTGTAAAAAACAGCA  
GACTCCCAGTGGAACTCGCCTTCAGATGCAGCCAGAAATAAGAGTTCTAGAATGTGTGTGCCATCCTTTT  
GTCTCAATCTGCATGATTGCAAGTCTCTTCAACATGATTGGGTGCGTGGAGTGTCTCGGTCTGTGCTT  
CCCCCTCTGAGCATGCCTTTTGATTGCGACCTGTGTACAAATGTGCCAGCCTGTGAGATGTGTCTGCCTG  
TCACCAGTATCGGCACATTTAGTTTTCCCTTTACGTGAGTTTGGTAAAATAGTGACAAAATGTAATGCA  
GTGCTCAGTCACAGAAAAATGTCAGGCCACAGAAATGGAGCATTGGCTGGTGGGTAGCGTGATGACCA  
TAGGCTTTATTTGGCTGGTGTGGTAAACAAGCAGCAGCTTGTGCAGGTGAGAATAAATGGCCATATTGCA  
TTTCATTTTAAGGACTCCCTTAAATGAAAATCTTCGTGTGGGACATGAACACAGGCTTTTCAAGAAATG  
ATCATCTACACTATATGTATGACTGTTGAAAGGCTGTTGTTCTCAGAAATCTTAAAAATGTTATGTAAT  
GTACATGAGTCCCTTCAGGAAGTCATCAGCTTTGTTTCACTTTCCTCAGATTAGATAGTAAACTGAGATT  
ATGAACATAAAGATGTGTGTAATTTATCTGTGAGTGAAGTGAAGTTTAAATAAAGCTTTTTGAAAAAGA  
ACTCTGGGTGGGTGCTGCTGCTCACACATAGTCCCACTACTGTGGAGGTGAGGGCAGGAGGATCAC  
TGGAGCCCCAAGAGTTCAAGATCAGCCTGGGCAGGATAGCGAGACCCTGTCTATAGAAAATATTAAAAATC  
AGCTAGGCATGGTGGCTTGCCCTTGCAATTCCTGCCACTTGGGAGGCTGAGGTGGGAGGTTGCGTTGAGC  
CCAGGAGCTCAAGGCTGCAATGGGCTGTGATCGAACCCTGAATTCACCTGGGTGACAGAGTGAGGCC  
CTGTCTCAAAAAGAGAACTCTCGATGTCACTGGCTTTCATGTAAGCAGAGCACATCATGTGAGCCCCAT  
TCGTGGATGTCTGAGCAGAAACAGAAATCTTGACCTGGAGCTTGTGTTGCTCTGTGCTAGAGGTTGGAGG  
TGTCTCTGTCTTTCTGTTGGTTCTGTGAGTTCAGGTCACTTAGAGATTCTGTTACATACACAGCTCTG  
ACAGGTTGGGGGAGATGATCAACCTTCCGCCTGCGCCTGTTCCCTTCCCTGACTCATGCCAAAGTATCCC  
TGAGATCTGCAAGGGACCGAGGACAGTACTGGCTGGTGGTCTGGGTACAGGCCACAGAGGCATCTGGACC  
CCATGTGCATCTGGACAGTTTGGTTGGATCCATTATGACACAAAACGGATGTGAATCTACAGAGCTA  
CATTTTCTCCCTGCCCTGTTTTCAGGCACAGTGGGTGTCGGGGAATGTAGCTGCCAGAGTTGACTGTCCC  
GTTCTTTGGTGTAAATGCCTGAAGGCCACCTTTACCATTTGGTCTGTGGTCTCACTGAAGAAAGAAACATT  
CTTCTTAAAGACTTTTTTCTCCTCAGAGTTGGAGCCACAGCGTGGTCAGGAAAGAGAAGTAGCCACTGG  
TGGCTCCTGGCATCCTCTGCTGGGCAGCCCCCTTCTCAAAGTGTGAGGGGTCCCCTTGTGTACAAGCAGG  
AAGGCTCTGAGAAAGTCAAGTTTGGTCTTACCACAGGATAATTCGATGAACCTGAAAAGCGGGTTTTGG  
CTTGTGTCAGGGACTCTGGTGGAAAGAAAGGGTGACAGCACCTGGCCTGGGCATGACACAAGTTAGGACC  
CGTACCAAGAGGCCCTGGAATTGAGGGTGGGGGTGCTGTGAGTCTTTCTCCCTCTTAGGAAACTCTAT  
TGGGTCTCCATCTGTACAGAAGCAGTAAATGATGTAGGGGCTGCCAGGTATAGGGTCTGTGGGGATGC  
TGGAACATGCCGAGGACAGGACGTGCCAGCCACCCTCTGCCCATATGTGCAGCAGGGCCACAGATGTGCTT  
GTCGGTAGGAGAGACCAAGCTGTCTGTGTGCCGATGTCTTGACACCTGAGACTTCAGGTTACCCATCCT  
GGTCTGCCATTCCATTGTCAGGGTGGCTTCCCTCCTTTGGGGACTCTTAACGCTTTGGTCTGTTAAAAAA  
AAAAAAAAAAAAAAAAATCCGGGCGTGGTGGCTCACTCTGTAATCCAGCACTTTGGGAGGCCGAGGTGGG  
CTGATCATCTGAGGTGAGGGTTCGAGGCCAGCCCTGACCAACATGGTGAAACCCGCTCTCTACT

Figure 36 part - 3

Human Arf1 mRNA sequence - var7 (public gi: 14714585) (SEQ ID NO: 331)

CAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCTTCCACCTGTCCACAAGCAT  
GGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTGGCAAAAAAGAAATGCGCATCTCTCATGGTGGGC  
CTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATTTCCCA  
CCATAGGCTTCAAGCTGGAACCCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTGGCCA  
GGACAAGATCCGGCCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGACAGC  
AATGACAGAGAGCGTGTGAACGAGGCCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCTCCGGG  
ATGCTGTCTCTCTGGTGTTCGCCAACAAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCACAGA  
CAAGCTGGGGCTGCACTCACTACGCCACAGGAACCTGGTACATTGAGGCCACCTGCGCCACCAGCGGCGAC  
GGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCCCTCCC  
TCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAAACGTGCGGCTCGTGGTGTGAGTGCCAGAAG  
CTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGTCTGTAATGTGGCAGACGCGAGCTGCGGCCA  
GGCTTTTATTTAATGTAAATAGTTTTTGTTCATGAGGCAGTTTCTGGTACTCCTATGCAATATTAC  
TCAGCTTTTTTATTTGTAAGAAAGAAAAATCAACTCACTGTTTCACTGTGAGAGGGGATGTAGGCCCATGG  
GCACCTGGCCTCCAGGAGTCGCTGTGTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTTGAAA  
TCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCAATTTTAAATAGTTAAGAAATCCAAGTCGAG  
AACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTGTCAGTTACGGCCTGGATGCCAGTCCG  
CAGCCCAGCTGTTCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCATGGT  
CACAGTAGAGATCCCCGCAACTCGCTTGTCTTGGGTACCCCTGCATTCCATAGCCATGTGCTTGTCCCT  
GTGCTCCCACGGTTCCAGGGCCAGGCTGGGAGCCCCACAGCCACCCACTATGCCGAGGCGGCCCTAC  
CCACCTTCAGGCAGCCTATGGGACGCGAGGCCCATCTGTCCCTCGGTGCGCGTGTGGCCAGAGTGGGT  
CGTCTGTCACCACTCGTGTCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGAGCGC  
GTGCAAGCCGGGCGAGGCGGTCCACCTAGACCACAGCCCCCTCGGGAGCACCCACCTCTGTGTGTGATGT  
AGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTCTTTT  
GTATTTTGATAAAACAGTGGAGCTGTAAATTTATCTTGGGAAACCTCAGAACTGGTCTATTGT  
GTGTCTGGAACCTCTTACTGCTTTCAATACAGATTAGTAATCAACTGTTTTGTATACTTGTTCAGT  
TTTCATTTGACAAAACAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACATTAAAAAAA  
AAAAAAAAAAAAAAAAAAAA

Human Arf1 mRNA sequence - var8 (public gi: 33872952) (SEQ ID NO: 332)

GTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCCCTCCCTCTCACTCCTCTTGCCCTCTGCTTTA  
CTCTCATGTGGCAAAACGTGCGGCTCGTGGTGTGAGTGCCAGAAGCTGCCCTCCGTGGTTTGGTCACCGTGT  
GCATCGCACCGTGTGTAAATGTGGCAGACGCGACCTCGGCCAGGCTTTTATTTAATGTAATAGTTT  
TTGTTTCCAAATGAGGCAGTTTCTGGTACTCCTATGCAATATTACTCAGCTTTTTTTATTGTAAGAAAGAAA  
AATCAACTCACTGTTTCACTGTGAGAGGGGATGTAGGCCATGGGCACCTGGCCTCCAGGAGTCGCTGTG  
TTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTGAAATCCATTTTGGTGGTTGGTTTTTAACC  
CAAACCTCAGTGCAATTTTTTAAATAGTTAAGAAATCCAAGTCGAGAACACTTGAACACACAGAAGGGAGAC  
CCCGCCTAGCATAGATTGTCAGTTACGGCCTGGATGCCAGTCCAGCCAGCTGTTCCCTCGGGAACA  
TGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCATGGTCACAGTAGAGATCCCCGCAACTCGCT  
TGTCTTGGGTCAACCTGCATTCCATAGCCATGTGCTTGTCCCTGTGCTCCACGGTTCAGGGGCCAG  
GCTGGGAGCCCCACAGCCACCCCACTATGCCGCGAGGCCGCCCTACCCACCTTCAGGCAGCCTATGGGACGC  
AGGCCCCATCTGTCCCTCGGTGCGCGTGTGGCCAGAGTGGGTCCGTGCTCCCAACACTCGTGTCTCGCT  
CAGACACTTTGGCAGGATGTCTGGGGCCTCAGGCAGGAGCGCGTGAAGCCGGGCGAGGCGGTCCACCT  
AGACCCACAGCCCCCTCGGGAGCACCCACCTCTGTGTGTGATGTAGCTTTCTCTCCCTCAGCCTGCAAGG  
GTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTCTTTTGTATTTTGATAAAACACTGAAGCTGGA  
GCTGTAAATTTATCTTGGGAAACCTCAGAACTGGTCTATTGTGTGCTGGAACCTCTTACTGCTTTC  
AATACACGATTAGTAATCAACTGTTTTGTATACTTGTTCAGTTTCATTTGACAAAACAGCACTGTA  
ATTATAGCTATTAGAATAAAATCTCTTAACATTAAAAAAA

Human Arf1 mRNA sequence - var9 (public gi: 15030200) (SEQ ID NO: 333)

GAGCCGCCATCTTGTGGGAGCAAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCA  
GTGTCTTCCACCTGTCCACAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTGGCAAAA  
AAGAAATGCGCATCCTCATGGTGGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCT  
GGGTGAGATCGTGACCACCATTTCCACCATAGGCTTCAACGTGGAACCCGTGGAGTACAAGAACATCAGC  
TTCACTGTGTGGGACGTGGGTGGCCAGGACAAAGATCCGGCCCTGTGGCGCCACTACTTCCAGAACACAC  
AAGGCCTGATCTTCGTGGTGGACAGCAATGACAGAGAGCGTGTGAACGAGGCCCCGTGAGGAGCTCATAG  
GATGCTGGCCGAGGACGAGCTCCGGGATGCTGTCTCTGGTGTTCGCCAACAAAGCAGGACCTCCCCAAC  
GCCATGAATGCGGCCGAGATCACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACCTGGTACATTC  
AGGCCACCTGCGCCACCAAGCGGCGACGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAA  
CCAGAAGTGAACGCGACCCCCCTCCCTCTCACTCCTCTGCTTACTCTCATGTGGCAAAACCT  
GCGGCTCGTGGTGTGAGTGCCAGAAGCTGCCCTCCGTGGTTTGGTCAACGTGTGCATCGCACCGTGTGTA  
AATGTGGCAGACGCGACCTGCGGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTCATGAGGCAG

Figure 36 part - 4

TTTCTGGTACTCCTATGCAATATTACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTTCAG  
TGCTGAGAGGGGATGTAGGCCCATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACG  
CCCTTGGCTTTAGAGCTGTGTTGAAATCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTT  
TAAATAGTTAAGAATCCAAGTCGAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTT  
GCAGTTACGGCCTGGATGCCAGTCGCCAGCCAGCTGTTCCCTCGGGAACATGAGGTGGTGGTGGCGCA  
GCAGACTGCGATCAATTCTGCATGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCTTGGGTCAACCCTG  
CATTCATAGCCATGTGCTTGTCCCTGTGCTCCACGGTTCCAGGGGGCCAGGCTGGGAGCCCCACAGCCA  
CCCCACTATGCCGAGGCCGCCCTACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCCATGTGTCCCT  
CGGTGCGCGTGTGGCCAGAGTGGGTCCGTGCTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGAT  
GTCTGGGGCCTCACCAGCAGGAGCGCGTGAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCCTCGG  
GAGCACCCACCTCTGTGTGTGATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAA  
AAAGACAACCTCTACTTTTTTCTTTTGTATTTTGATAAACTGAAGCTGGAGCTGTTAAATTTATCTTG  
GGGAAACCTCAGAAGCTGGTCTATTTGGTGTGCTGGAACCTCTTACTGCTTTCAATACAGATTAGTAATC  
AACTGTTTTGTATACTTGTGTTTTTCACTTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATA  
AAATCTCTTAACATTAAAAA

Human Arf1 mRNA sequence - var10. (public gi: 16553846) (SEQ ID NO: 334)

GTGGGAGCAAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCTTCCACC  
TGTCCACAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCAT  
CCTCATGGTGGCCTGGATGCTGCAGGGAAGACCAGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTG  
ACCACCATTCCCACCATAGGCTTCAACGTGGAACCCGTGGAGTACAAGAATCAGCTTCACTGTGTGGG  
ACGTGGGTGGCCAGGACAAGATCCGGCCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCCTGATCTT  
CGTGGTGGACAGCAATGACAGAGAGCGTGTGAACGAGGCCCTGAGGAGCTCATGAGGATGTGCGCCGAG  
GACGAGCTCCGGGATGCTGTCTCTCTGGTGTTCGCCAACAAAGCAGGACCTCCCCAACGCCATGAATGCGG  
CCGAGATCACAGACAAGCTGGGGCTGCACTACTACGCCACAGGAACCTGGTACATTACAGGCCACCTGCGC  
CACCAGCGGCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCCAGAACTGAACG  
CGACCCCTCTCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTG  
TGAGTGCCAGAAGCTGCCCTCCGTGGTGTGGTCCCGTGTGCATCGCACCGTGTGTAATGTGGCAGACG  
CAGCCTGCGGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTCCTCAATGAGGCAGTTTCTGGTACTCC  
TATGCAATATTACTCAGCTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTTCACTGCTGAGAGGGGA  
TGTAGGCCCATGGGCACCTGGCCTCCAGGAGTGGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAG  
AGCTGTGTTGAAATCCATTTTGGTGGTGGTTTTTAACCCTCACTGCTGCTGAGAGGGGA  
AATCCAAGTCGAGAACACTTGAACACACAGAAGGGAGACCCCGCTAGCATAGATTTGCAGTTACGGCCT  
GGATGCCAGTCGCCAGCCAGCTGTTCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATC  
AATCTGCAATGGTTCACAGTAGAGATCCCGCAACTCGCTTGTCTTGGGTACCCCTGCATTCCATAGCCA  
TGTGCTTGTCCCTGTGCTCCACGGTTCCAGGGGCCAGGCTGGGAGCCACAGCCACCCCACTATGCCG  
CAGGCCGTCTACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTGCGGTGTG  
GCCAGAGTGGGTCCGTGCTCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCA  
CCAGCAGGAGCGCGTGAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCTCGGGAGCACCCACCT  
CTGTGTGTGATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCT  
ACTTTTTTCTTTTGTATTTTGTAACTGAAGCTGAGCTGTTAAATTTATCTTGGGGAAACCTCAGA  
ACTGGTCTATTGGTGTGCTGGAACCTCTTACTGCTTTCAATACAGATTAGTAATCAACTGTTTTGTAT  
ACTTGTGTTTCACTTTTCACTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAAC  
ATT

Human Arf1 mRNA sequence - var11 (public gi: 16553799) (SEQ ID NO: 335)

AACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCTTCCACCTGTCCACAAG  
CATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGGTG  
GGCCTGGATGCTGCAGGGAAGACCAGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGAGCACCATTG  
CCACCATAGGCTTCAACGTGGAACCCGTGGAGTACAAGAATCAGCTTCACTGTGTGGGACGTGGGTGG  
CCAGGACAAGATCCGGCCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGAC  
AGCAATGACAGAGAGCGTGTGAACGAGGCCGTGAGGAGCTCATGAGGATGTCTGGCCGAGGACGAGCTCC  
GGGATGCTGTCTCTCTGGTGTTCGCCAACAAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCAC  
AGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACCTGGTACATTACAGGCCACCTGCGCCACAGCGGC  
GACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCCAGAAGTGAACGCGACCCCCCT  
CCCTCTCACTCCTCTTGCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTGCCAG  
AAGCTGCTCCGTGGTGTGGTACCCTGTGCATCGCACCGTGTGTAATGTGGCAGACCGCAGCCTGCGG  
CCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTCCTAATGAGGAGTCTTCTGGTACTCCTATGCAATAT  
TACTCAGCTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTTCACTGCTGAGAGGGGATGAGGCCCA  
TGGGCACCTGGCCTCCAGGAGTGGTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTTG  
AATCCATTTGGTGGTGGTGTGTTTTAACCCTCACTGCTTTTTTAAATAGTTAAGAATCCAAGTC  
GAGAACACTTGAACACACAGAAGGGAGACCCCGCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAGT

Figure 36 part - 5

CGCCAGCCCAGCTGTTCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCAT  
GGTCACAGTAGAGATCCCCGCAACTCGCTTGCTTGGGTACCCTGCATTCCATAGCCATGTGCTTGTC  
CCTGTGCTCCACGGTTCCCGAGGGGCCAGGCTGGGAGCCACAGCCACCCCACTATGCCGAGGCCGCC  
TACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTGCGCGTGTGGCCAGAGTGG  
GTCCGTGCTCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGAG  
CGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCCTCGGGAGCACCCCACTCTGTGTGTGA  
TGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTCT  
TTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGAAACCTCAGAACTGGTCTAT  
TTGGTGTGCTGGAACCTCTTACTGCTTTCAATACAGATTAGTAATC

Human Arf1 mRNA sequence - var12 (public gi: 20147654) (SEQ ID NO: 336)

ATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAGAAATGCGCATCCTCATGGTGG  
GCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATTCC  
CACCATAGGCTTCAACGTGGAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTGGC  
CAGTCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAAGAGCTCATGAGGATGCTGGCCGAGGACGAGCTCG  
GGATGCTGTCTCTCTGGTGTTCGCCAACAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCACA  
GACAAGCTGGGGTGCACCTACTACGCCACAGGAACCTGGTACATTACAGGCCACCTGCGCCACCAGCGCG  
ACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGA

Human Arf1 mRNA sequence - var13 (public gi: 178163) (SEQ ID NO: 337)

AAACCAACGCCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCTTGCCAGTGTCTTCCACCTGTCCACAA  
GCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAGAAATGCGCATCCTCATGGT  
GGGCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATT  
CCCACCATAGGCTTCAACGTGGAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTG  
GCCAGGACAAGATCCGGCCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGTGGA  
CAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAAGAGCTCATGAGGATGCTGGCCGAGGACGAGCTC  
CGGGATGCTGTCTCTCTGGTGTTCGCCAACAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCA  
CAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACCTGGTACATTACAGGCCACCTGCGCCACCAGCGG  
CGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCC  
TCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAACCGTGGCGCTCGTGGTGTGAGTGCCA  
GAAGCTGCCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGTGTAAATGTGGCAGACGACGCTGCG  
GCCAGGCTTTTTATTTAATGTAAATAGTTTTTGGTTTCCAATGAGGCAGTTTCTGGTACTCTTATGCAATA  
TTACTCAGCTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTTCACTGTGTGAGAGGGGATGTAGGCCC  
ATGGGCACCTGGCCTCCAGGAGTCTGCTGTGTTGGGAGAGCCGCCACGCCCTTGGCTTTAGAGCTGTGTT  
GAAATCCATTTTGGTGGTTGGTTTTTAACCCAACTCAGTGCATTTTTTAAATAGTTAAGAAATCCAAGT  
CGAGAACACTTGAACACACAGAAGGGAGACCCCGCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAG  
TCGCCAGCCAGCTGTTCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATCTGCA  
TGGTCACAGTAGAGATCCCGCAACTCGCTTGCTTGGGTACCCCTGCATTCCATAGCCATGTGCTTGT  
CCCTGTGCTCCACGGTTCACAGGGGCCAGGCTGGGAGCCACAGCCACCCCACTATGCCGAGGCGGCC  
CTACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTGCGCGTGTGGCCAGAGTG  
GGTCCGTGCTCCCAACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGA  
GCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCCTCGGGAGCACCCACCTCTGTGTGTG  
ATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTC  
TTTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGAAACCTCAGAACTGGTCTA  
TTGGTGTGCTGGAACCTCTTACTGCTTTCAATACAGATTAGTAATCAACTGTTTTGTATACTTGT  
CAGTTTTCATTTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACATTTT

Human Arf1 mRNA sequence - var14 (public gi: 178982) (SEQ ID NO: 338)

GGGGAAAACCAACGCCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCTTGCCAGTGTCTTCCACCTGTG  
CACAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAGAAATGCGCATCCTC  
ATGGTGGGCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCA  
CCATTCCCACCATAGGCTTCAACGTGGAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGT  
GGGTGGCCAGGACAAGATCCGGCCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTG  
GTGGACAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAAGAGCTCATGAGGATGCTGGCCGAGGACG  
AGCTCCGGGATGCTGTCTCTCTGGTGTTCGCCAACAGCAGGACCTCCCCAACGCCATGAATGCGGCCGA  
GATCAGACAGAAGCTGGGGCTGCACTCACTACGCCACAGGAACCTGGTACATTACAGGCCACCTGCGCCACC  
AGCGGCGAGCGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCCGAC  
CCCCCTCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAACGTGCGGCTCGTGGTGTGAG  
TGCCAGAAGCTGCCTCCGTGGTTTGGTCAACCGTGTGCATCGCACCGTGTGTAAATGTGGCAGACGACG  
CTGCGGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTCATGAGGCAGTTTCTGGTACTCTATG  
CAATATTACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTTCACTGTGTGAGAGGGGATGTA

Figure 36 part - 6



GGCCCATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTAGAGCTG  
TGTGAAATCCATTTTGGTGGTTGGTTTAAACCAAACCTCAGTGCATTTTTTAAATAGTTAAGAATCCA  
AGTCGAGAACACTTGAACACACAGAAGGGAGACCCCGCTAGCATAGATTTGCAGTTACGGCCTGGATGC  
CAGTCGCCAGCCAGCTGTTCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCT  
GCATGGTCACAGTAGAGATCCCCGCAACTCGCTTGCTTGGGTCAACCTGCATTCCATAGCCATGTGCT  
TGTCCCTGTGCTCCACGGTTCCAGGGGGCCAGGCTGGGAGCCACAGCCACCCACTATGCCGCAGGCC  
GCCCTACCCACCTTCAGGCAGCCTATGGGACGCAGGCCCATCTGTCCCTCGGTCCGCGTGTGGCCAGAG  
TGGTCCGTGTCCTCCCAACACTCGTGTGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGG  
AGCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCTCGGGAGCACCCACCTCTGTGTGT  
GATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTT  
CTTTTGTATTTTGATAAACACTGAAGCTGGAGCTGTAAATTTATCTTGGGGAAACCTCAGAACTGGTCT  
ATTTGGTGTGCTAGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAACTGTTTTGTATACTTGT  
TTCAGTTTTCATTTGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACATT

Human Arf1 mRNA sequence - var15 (public gi: 3005720) (SEQ ID NO: 339)

AAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCTTCCACCTGTCCACAA  
GCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGGT  
GGGCTTGGATGTCTGAGGGAAGACCAGATCCTTACAAGCTTAAGCTGGGTGAGATCGTGACCACCAT  
CCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTG  
GCCAGGACAAGATCCGGCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGGA  
CAGCAATGACAGAGAGCGTGAACGAGGCCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCTC  
CGGGATGCTGTCTCTCTGGTGTTCGCCAACAGCAGGACCTCCCCAACGCCATGAATGCCGCCGAGATCA  
CAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAAGTGTACATTAGGCCACCTGCCGCCACCAGCGG  
CGACGGGCTCTATGAAGGACTGGAGTGGCTGTCCAATCAGCTCCGGAACCCAGAAAGTGAACCGGACCCCC  
TCCCTCTCACTCCTCTTGGCTTACTCTCATGTGGCAACGTGCGGCTCGTGGTGTGAGTGCCA  
GAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCCTGCTGTAATGTGGCAGACGCACCTGCGG  
CCAGGCTTTTTTATTTAATGTAAATAGTTTTTGTTCATGAGGCAGTTTCTGGTACTCCTATGCAATAT  
TACTCAGCTTTTTTTATGTAAAAAGAAAAATCAACTCACTGTTCAGTGTGAGAGGGGATGTAGGCCCCA  
TGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGCCACGCCCTTGGCTTAGAGCTGTGTTG  
AAATCCATTTTGGTGGTTGGTTTTTAACCCAAACCTCAGTGCATTTTTTAAATAGTTAAGAATCCAAGTC  
GAGAACAACCTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAGT  
CGCCAGCCAGCTGTTCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCAT  
GGTCACAGTAGAGATCCCCGCAACTCGCTTGCTTGGTCAACCTGCATTCCATAGCCATGTGCTTGTCC  
CTGTGCTCCACGGTTCCAGGGGGCCAGGCTGGGAGCCACAGCCACCCACTATGCCGCAGGCCGCCCT  
ACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTGCGCGTGTGGCCAGAGTGGG  
TCCGTGCTCCCAACACTCGTGTCTGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGAGC  
GCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCTCGGGAGCACCCACCTCTGTGTGTGAT  
GTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTCTT  
TTGTATTTTGATAAACACTGAAGCTGGAGCTGTAAATTTATCTTGGGGAAACCTCAGAACTGGTCTATT  
TGGTGTGCTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAAAAAAAAAAAAAAAAAAAAAA  
AAA

Human Arf1 protein sequence - var1 (public gi: 3360491) (SEQ ID NO: 223)

MGNIFANLFKGLFGKKEMRILMVGLDAAGKTTILYKLKLGEIVTTIPTIGFNVETVEYKNISFTVWDVGG  
QDKIRPLWRHYFQNTQGLIFVVDSDNRERVNEAREELMRMLAEDELRAVLLLVFANKQDLPNAMNAAEIT  
DKLGLHSLRHRNWIQATCATSGDGLYEGLDWLSNQLRNQK

Figure 36 part - 7



Unigene Name: ARF5 Unigene ID: Hs.430657

Human ARF5 mRNA sequence - var1 (public gi: 178986) (SEQ ID NO: 340)

CCAGTTCAGCCCGCACCCCGCGTCGGTGGCCGCGCCCTCCCCGGGCCCGCCATGGGCCTCACCGTGT  
CCGCGCTCTTTTCGCGGATCTTCGGGAAGAAGCAGATGCGGATTCTCATGGTTGGCTTGGATGCGGCTGG  
CAAGACCACAATCCTGTACAAACTGAAGTTGGGGAGATTGTCACCACCATCCCAACCATAGGCTTCAAT  
GTAGAAACAGTGGAATATAAGAATCTGTTTACAGTCTGGGACGTGGGAGGCCAGGACAAGATTCCGGC  
CTCTGTGGCGGCACTACTTCCAGAACTCAGGGCCTCATCTTTGTGGTGGACAGTAATGACCGGGAGCG  
GGTCCAAGAATCTGCTGATGAACTCCAGAAGATGCTGCAGGAGGACGAGCTGCGGGATGCAGTGTCTGTG  
GTATTTGCCAACAAGCAGGACATGCCCAACGCCATGCCCGTGAGCGAGCTGACTGACAAGCTGGGGCTAC  
AGCACTTACGCAGCCGCACGTGGTATGTCCAGGCCACCTGTGCCACCCAAGGCACAGGTCTGTACGATGG  
TCTGGACTGGCTGTCCACGAGCTGTCAAAGCGCTTAACCCAGCCAGGGGCAGGCCCTGATGCCCGGAAGC  
TCCTGCGTGCATCCCCGGGATGACCAGACTCCCGGACTCCTCAGGCAGTGCCCTTTCTCCCACTTTTCC  
TCCCCCATAGCCACAGGCCTCTGCTCCTGCTCCTGCTGCATGTTCTCTCTGTTGTTGGAGCCTGGAGCC  
TTGCTCTCTGGGCACAGAGGGGTCCACTCTCCTGCTGCTGGGACCTATGGAAGGGGCTTCTGCGCAAG  
GCCCTCTTCCAGAGGAGGAGCAGGGATCTGGGTTTCTTTTTTTTTTCTGTTTTGGGTGTACTCTAGG  
GGCCAGGTTGGGAGGGGAAGGTGAGGGCTTCGGGTGGTGCTATAATGTGGCACTGGATCTTGAGTAATA  
AATTTGCTGTGGTTTG

Human ARF5 mRNA sequence - var2 (public gi: 21620017) (SEQ ID NO: 341)

CTCTCCTGCTGCTGCTGCGCCCCATCCCCCGCGGCCCGGCCAGTTCAGCCCGCACCCCGCGTCCGGTGC  
CCGCGCCCTCCCCGGGCTCCGCCATGGGCCCTCACCGTGTCCGCGCTCTTTTCGCGGATCTTCGGGAAGA  
AGCAGATGCGGATTCTCATGGTTGGCTTGGATGCGGCTGGCAAGACCACAATCCTGTACAACTGAAGTT  
GGGGGAGATTGTCAACCATCCCAACCATAGGCTTCAATGTAGAAACAGTGGAATATAAGAATCTGT  
TTCACAGTCTGGGACGTGGGAGGCCAGGACAAGATTCCGGCCTCTGTGGCGGCACTACTTCCAGAACTC  
AGGCCTCATCTTTGTGGTGGACAGTAATGACCGGGAGCGGTCCAAGAATCTGCTGATGAACTCCAGAA  
GATGCTGCAGGAGGACGAGCTGCGGGATGCAGTGCTGCTGGTATTGCCAACAAGCAGGACATGCCCAAC  
GCCATGCCCGTGAGCGAGCTGACTGACAAGCTGGGGCTACAGCACTTACGCAGCCGCACGTGGTATGTCC  
AGGCCACCTGTGCCACCCAAGGCACAGGTCTGTACGATGGTCTGGACTGGCTGTCCACGAGCTGTCAAA  
GCGCTAACCAGCCAGGGGCAGGCCCTGATGCCCGGAAGCTCCTGCGTGCATCCCCGGGATGACCAGACT  
CCCGGACTCCTCAGGCAGTGCCCTTTCTCCCACTTTTCTCCCCCATAGCCACAGGCCTCTGCTCCTGC  
TCCTGCCTGCATGTTCTCTCTGTTGTTGGAGCCTGGAGCCTTGCTCTCTGGGCACAGAGGGGTCCACTCT  
CCTGCTGCTGGGACCTATGGAAGGGGCTTCTGGCCAAGGCCCCCTCTTCCAGAGGAGGAGCAGGGATC  
TGGGTTTCTTTTTTTTTTCTGTTTTGGGTGTACTCTAGGGGCCAGGTTGGGAGGGGAAGGTGAGGGCT  
TCGGGTGGTGCTATAATGTGGCACTGGATCTTGAGTAATAAATTTGCTGTGGTTTGTAAAAA

Human ARF5 mRNA sequence - var3 (public gi: 12804364) (SEQ ID NO: 342)

CCCGCGTCCGGTGCCCCGCGCCCTCCCCGGGCCCCGCCATGGGCCTCACCGTGTCCGCGCTCTTTTCGCGG  
ATCTTCGGGAAGAAGCAGATGCGGATTCTCATGGTTGGCTTGGATGCGGCTGGCAAGACCACAATCCTGT  
ACAACTGAAGTTGGGGGAGATTGTCAACCATCCCAACCATAGGCTTCAATGTAGAAACAGTGGAATA  
TAAGAATCTGTTTACAGTCTGGGACGTGGGAGGCCAGGACAAGATTCCGGCTCTGTGGCGGCACTAC  
TTCAGAACTCAGGGCCTCATCTTTGTGGTGGACAGTAATGACCGGGAGCGGGTCCAAGAATCTGCTG  
ATGAACTCCAGAAGATGCTGCAGGAGGACGAGCTGCGGGATGCAGTGCTGCTGTTATTGCCAACAAGCA  
GGACATGCCCCAACGCCATGCCGTGAGCGAGCTGACTGACAAGCTGGGGCTACAGCACTTACGCAGCCGC  
ACGTGGTATGTCCAGGCCACCTGTGCCACCCAAGGCACAGGTCTGTACGATGGTCTGGACTGGCTGTCCC  
ACGAGCTGTCAAAGCGCTAACCAGCCAGGGGCAGGCCCTGATGCCCGGAAGCTCCTGCGTGCATCCCCG  
GATGACCACTACTCCCGGACTCCTCAGGCAGTGCCCTTTCTCCCACTTTTCTCCCCCATAGCCACAGGC  
CTCTGCTCCTGCTCCTGCCTGCATGTTCTCTGTTGTTGGAGCCTGGAGCCTTGCTCTCTGGGCACAGA  
GGGTCCACTCTCCTGCTGCTGGGACCTATGGAAGGGGCTTCTGGCCAAGGCCCCCTCTTCCAGAGGA  
GGAGCAGGATCTGGGTTTCTTTTTTTCTGTTTTGGGTGTACTCTAGGGGCCAGGTTGGGAGGGGG  
AAGGTGAGGGCTTCGGGTGGTGCTATAATGTGGCACTGGATCTTGAGTAATAAATTTGCTGTGGTTTGA  
AAAAA

Human ARF5 mRNA sequence - var4 (public gi: 30583012) (SEQ ID NO: 343)

ATGGGCCTCACCGTGTCCGCGCTCTTTTCGCGGATCTTCGGGAAGAAGCAGATGCGGATTCTCATGGTTG  
GCTTGGATGCGGCTGGCAAGACCACAATCCTGTACAACTGAAGTTGGGGGAGATTGTCAACCATCCC  
AACCATAGGCTTCAATGTAGAAACAGTGGAATATAAGAATCTGTTTACAGTCTGGGACGTGGGAGGC  
CAGGACAAGATTCCGGCTCTGTGGCGGCACTACTTCCAGAACTCAGGGCCTCATCTTTGTGGTGGACA  
GTAATGACCGGGAGCGGGTCCAAGAATCTGCTGATGAACTCCAGAAGATGCTGCAGGAGGACGAGCTGCG  
GGATGCAGTGCTGCTGGTATTTGCCAACAAGCAGGACATGCCCAACGCCATGCCCGTGAGCGAGCTGACT

Figure 36 part - 8

GACAAGCTGGGGCTACAGCACTTACGCAGCCGCACGTGGTATGTCCAGGCCACCTGTGCCACCCAAGGCA  
CAGGTCTGTACGATGGTCTGGACTGGCTGTCCCACGAGCTGTCAAAGCGCTAG

Human ARF5 mRNA sequence - var5 (public gi: 6995999) (SEQ ID NO: 344)

CCGCGTCGGTGCCCGCGCCCCCTCCCCGGGGCCCCGCCATGGGCTCACCGTGTCCGCGCTCTTTTCGCGGA  
TCTTCGGGAAGAAGCAGATGCGGATTCTCATGGTTGGCTTGGATGCGGCTGGCAAGACCACAATCCTGTA  
CAAAGTGAAGTTGGGGGAGATTGTCAACCATCCCAACCATAGGCTTCAATGTAGAAACAGTGGAAATAT  
AAGAACATCTGTTTACAGTCTGGGACGTGGGAGGCCAGGACAAGATTCCGGCTCTGTGGCGGCACTACT  
TCCAGAACACTCAGGGCCTCATCTTTGTGGTGGACAGTAATGACCGGGAGCGGGTCCAAGAATCTGCTGA  
TGAATCCAGAAAGATGCTGCAGGAGGACGAGCTGCGGGATGCAGTGTCTGCTGGTATTTGCCAACAAAGCAG  
GACATGCCCAACGCCATGCCCCGTGAGCGAGCTGACTGACAAGCTGGGGCTACAGCACTTACGCAGCCGCA  
CGTGGTATGTCCAGGCCACCTGTGCCACCAAGGCACAGGTCTGTACGATGGTCTGGACTGGCTGTCCCA  
CGAGCTGTCAAAGCGCTAACCAGCCAGGGGAGGCCCTGATGCCCGGAAGCTCTGCGTGCATCCCCGG  
GATGACCAGACTCCCGGACTCCTCAGGCAGTGCCCTTTCTCTCCACTTTTCTCTCCCCATAGCCACAGGC  
CTCTGCTCCTGCTCCTGCCTGCATGTTCTCTGTGTTGGAGCCTGGAGCCTTGTCTCTGGGCACAGA  
GGGGTCCACTCTCTGCTGCTGGGACCTATGGAAGGGGCTTCTGGCCAAGGCCCTCTTCCAGAGGA  
GGAGCAGGGATCTGGGTTTCTTTTTTTTCTGTTTTGGGTGTACTCTAGGGGCCAGGTTGGGAGGGGG  
AAGGTGAGGCTTCGGGTGGTGCTATAATGTGGCACTGGATCTTGAGTAATAAATTTGCTGTGGTTTG

Human ARF5 protein sequence - var1 (public gi: 30583013) (SEQ ID NO: 224)

MGLTVSALFSRIFGKKQMRILMVGLDAAGKTTILYKLKLGEIVTTIPTIGFNVETVEYKNICFTVWDVGG  
QDKIRPLWRHYFQNTQGLIFVVDNSDRERVQESADELQKMLQDELDRLDAVLLVFANKQDMPNAMPVSELT  
DKLGLQHLRSRTWYVQATCATQGTGLYDGLDWLSHELKSR

Unigene Name: ATP6V0C Unigene ID: Hs.389107

Human ATP6V0C mRNA sequence - var1 (public gi: 33874373) (SEQ ID NO: 345)

GGTATTTAGAGCGCAGCGGCTGACGGGCCGGATCGCCTTCGCGCGCCCGCCCGCAAACCTTCGTGCCC  
GGCCCCGCTCCTCGCCCCCGCCTCCGCCACCGCCTCGGCCCGCAGAGCTTGCCCCCTCCCCACCCGAGACA  
TGTCGAGTCCAAGAGCGGCCCGAGTATGCTTCGTTTTTCGCGCTCATGGGCGCCTCGGCCCATATGGT  
CTTCAGCGCCTTGGGCGCTGCCTATGGCACAGCCAAGAGCGGTACCGGCATTGCGGCCATGTCTGTCTATG  
CGGCCGGAGCAGATCATGAAGTCCATCATCCCACTGGTTCATGGCTGGCATCATCGCCATCTACGGCCTGG  
TGGTGGCAGTCTCATCGCCAACTCCCTGAATGACGACATCAGCCTCTACAAGAGCTTCCTCCAGCTGGG  
CGCCCGCTGAGCGTGGGCGCTGAGCGGCCTGGCAGCCGGCTTTGCCATCGGCATCGTGGGGGACGCTGGC  
GTGCGGGGACCCGCCAGCAGCCCCGACTATTCGTGGGCATGATCCTGATTCTCATCTTCGCCGAGGTGC  
TCGGCCTCTACGGTCTCATCGTCCCTCATCTCTCCACAAAGTAGACCCTCTCCGAGCCCACAGCCA  
CAGAATATTATGTAAAGACCAACCCCTCCTCATTCCAGAACGAACAGCCTGACACATACGCACGGGGCCTGG  
CGCCCCCAGTAGTTGGTCTTGTACATGCGCAGTGTCTAGTGCCCATCGTCTGTTTCCCCGGCCTTGCCC  
CCGCCCCCCCCGTGCCGTGGACATCTGGGCCACTCATCGCCCCCTCAGGCCCCCGGCGCCCCACCCCT  
AGAGTGCTCTGTGTATGCGGATGATTTAGAATTGTCATTTCTCTTTACTGGATGTTTATTTATAAAGATC  
TGCCCTGTTCCTGCTCTGCGAGCGGCCCTTGTCTCCAGCTATCTATAACCTTAGCTAGAGTGTGCGC  
TTGTGGGTTCTCTGTGCTGAGACTTCTGGATGGAGCCGCCCTCACCGCCGGGCCCGTGGCCTTGCGCGG  
AGCTGTGTCCAATAAAGTTCTTGATGTGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human ATP6V0C mRNA sequence - var2 (public gi: 33872390) (SEQ ID NO: 346)

GGCTGACGGGCGGATCGCCTTCGCGCGCCCGCCCGCAAACCTTCGTGCCCCGGCCGCTCTCGCCCCC  
GCCTCCGCCACCGCCTCGGCCCGCAGAGCTTGCCCCCTCCCCACCCGAGACATGTCCGAGTCCAAGAGC  
GGCCCCGAGTATGCTTCGTTTTTCGCGCTCATGGGCGCCTCGGCCCATGGTCTTCAGCGCCCTGGGCG  
CTGCCATGGCACAGCCAAGAGCGGTACCGGCATTGCGGCCATGTCTGTATGCGGCCGAGCAGATCAT  
GAAGTCCATCATCCAGTGGTTCATGGCTGGCATCATCGCCATCTACGGCCTGGTGGTGGCAGTCTCATC  
GCCAACTCCCTGAATGACGACATCAGCCTCTACAAGAGCTTCCTCCAGCTGGGCGCCGCGCTGAGCGTGG  
GCCTGAGCGGCCTGGCAGCCGGCTTTGCCATCGGCATCGTGGGGGACGCTGGCGTGGCGGGCACCGCCCA  
GCAGCCCCGACTATTCGTGGGCATGATCCTGATCTCTCGCCGAGGTGCTCGGCCCTTACGGTCTC  
ATCGTCCGCCCTCATCTCTCCACAAAGTAGACCTCTCCGAGCCACAGCCACAGAATATTATGTAAAG  
ACCACCCCTCCTCATTCAGAACGAACAGCCTGACACATACGCACGGGGCGCGCCCCCAGTAGTTGGT  
CTTGTACATGCGCAGTGTCTAGTGCCCATCGTCTGTTTCCCCGGCCTTGCCCCCGCCCGCCCCGTGCCG  
TGACATCTGGGCCCACTCATCGCCCCCTCAGGCCCCCGGCGCCCCACCCCTAGAGTGTCTGTGTATG  
CGGATGATTTAGAATTGTCATTTCTCTTTACTGGATGTTTATTTATAAAGATCTGGCCTGTTCTGCGTC

Figure 36 part - 9

TGCGGAGCGGCCCTTGTCTCCAGCTATCTATAACCTTAGCTAGAGTGTGCGCTTGTGGGTTCTGTTC  
TGAGACTTCTGGATGGAGCCGCCCTCACCGCCGGGCGCCCTGCGCGGAGCTGTGTCCAATAAAG  
TTCTTGGATGTGAAA  
AAAAAAAAAAAAAA

Human ATP6V0C mRNA sequence - var3 (public gi: 33873673) (SEQ ID NO: 347)

CGCCTTCGCGCGCGCCCGCCGCAACCTTCGTGCGCGCGCCCTCGCCCCCGCCTCCGCCACCGCCT  
CGGCGCGCAGAGCTTGCCTCCCTCCACCCGAGACATGTCCGAGTCCAAGAGCGGCCCGAGTATGCTT  
CGTTTTTCGCGCTCATGGGCGCCTCGGCGGCCATGGTCTTCAGCGCCCTGGGCGCTGCCTATGGCACAGC  
CAAGAGCGGTACCGGCATTCGCGCCATGTCTGTATGCGGCGGAGCAGATCATGAAGTCCATTATCCCA  
GTGTCATGGCTGGCATCATCGCCATCTACGGCCTGGTGGTGGCAGTCTCATCGCCAACTCCCTGAATG  
ACGACATCAGCCTCTACAAGAGCTTCTCCAGCTGGGCGCGCGCTGAGCGTGGGCGCTGAGCGGCGCTGGC  
AGCGGCTTTGCCATCGGCATCGTGGGGGACGCTGGCGTGCGGGCGACCGCCAGCAGCCCCGACTATTC  
GTGGGCATGATCTGATTCTCATCTTCGCGGAGGTGCTCGGCTCTACGGTCTCATCGTCCGCTCATCC  
TCTCCACAAAGTAGACCTCTCCGAGCCACAGCCACAGAATATTATGTAAAGACCACCCCTCCTCATT  
CCAGAACGAACAGCCTGACACATACGCAGGGGCGCGCGCCCGCAGTAGTTGGTCTTGTACATGCGCAGT  
GTCCTAGTGGCCATCGTCTGTTTCCCGGCGCTTGCCTCCGCGCGCGCGCTGCGGTGGACATCTGGGCGCA  
CTCATCGCCCTCCAGCGCCCCGCGCGCCCGCCTAGAGTGCTCTGTGTATGCGGATGATTTAGAATT  
GTCATTTCTCTTTACTGGATGTTTATTTATAAAGATCTGGCCTGTTCTGCGTCTGCGGAGCGGCGCTTG  
TCTCCAGCTATCTATAACCTTAGCTAGAGTGTGCGCTTGTGGGTTCTGTGCTGAGACTTCTCGGATG  
GAGCGCGCTCACCGCCGGGCGCGCTGGCCCTGCGCGGAGCTGTGTCCAATAAAGTTCTTGGATGTGAAA  
AAAAAAAAAAAAAAAAAAAA

Human ATP6V0C mRNA sequence - var4 (public gi: 33990932) (SEQ ID NO: 348)

GACGGGCGGATCGCCTTCGCGCGCGCGCGCCGCAACCTTCGTGCGCGCGCCCTCGCCCCCGCCT  
CCGCCACCGCCTCGGCGCGCAGAGCTTGCCCTCCACCCGAGACATGTCCGAGTCCAAGAGCGGCC  
CCGAGTATGCTTCGTTTTTCGCGCTCATGGGCGCCTCGGCGCCATGGTCTTCAGCGCCTGGGCGCTGC  
CTATGGCACAGCCAAGAGCGGTACCGGCATTGCGGCCATGTCTGTATGCGGCGGAGCAGATCATGAAG  
TCCATCATCCAGTGGTTCATGGCTGGCATCATCGCCATCTACGGCCTGGTGGTGGCAGTCTCATCGCCA  
ACTCCTGAATGACGACATCAGCCTCTACAAGAGCTTCTCCAGCTGGGCGCGCGCCTGAGCGTGGGCGT  
GAGCGGCTGGCAGCGCGCTTTGCCATCGGCATCGTGGGGGACGCTGGCGTGCGGGCGACCGCCAGCAG  
CCCGACTATTTCGTGGGCATGATCCTGATTCTCATCTTCGCGGAGGTGCTCGGCGCTTACGGTCTCATCG  
TCGCGCTCATCCTCTCCACAAAGTAGACCTCTCCGAGCCACAGCCACAGAATATTATGTAAAGACCA  
CCCCCTCCTATTCCAGAACGAACAGCCTGACACATACGCAGGGGCGCGCGCCCGCAGTAGTTGGTCTTG  
TACATGCGCAGTGTCTAGTGCCCATCGTCTGTTTCCCGGCGCTTGCCTCCGCGCGCGCGCGCTGCGGTGGA  
CATCTGGGCGCACTCATCGCCCTCCAGGCCCCGGCGCGCCCGCCTAGAGTGCTCTGTGTATGCGGA  
TGATTTAGAATTGTCTTCTCTTTACTGGATGTTTATTTATAAAGATCTGGCCTGTTCTGCGTCTGCG  
GAGCGGCGCTTGTCTCCAGCTATCTATAACCTTAGCTAGAGTGTGCGCTTGTGGGTTCTGTGCTGAG  
ACTTCTGGATGGAGCGCGCTCACCGCCGGGCGCGCTGGCCCTGCGCGGAGCTGTGTCCAATAAAGTTCT  
TGGATGTGAAAAAAAAAAAAAAAAAAAA

Human ATP6V0C mRNA sequence - var5 (public gi: 19913436) (SEQ ID NO: 349)

GTTCTGCGGTGCTGGTATTTAGAGCGCAGCGGCTGACGGGCGGATCGCCTTCGCGCGCGCGCGCGCA  
AACCTTCGTGCGCGCGCGCTCCTCGCCCCCGCCTCCGCGACCGCCTCGGCGCGCAGAGCTTGCCCCCTCC  
CCACCCGAGACATGTCCGAGTCCAAGAGCGGCCCGAGTATGCTTCGTTTTTCGCGCTCATGGGCGCCT  
CGGCGCCATGGTCTTCAGCGCCTGGGCGCTGCCTATGGCACAGCCAAGAGCGGTACCGGCATTGCGGC  
CATGTCTGTATGCGGCGGAGCAGATCATGAAGTCCATCATCCAGTGGTTCATGGCTGGCATCATCGCC  
ATCTACGGCCTGGTGGTGGCAGTCTCATCGCCAACTCCCTGAATGACGACATCAGCCTCTACAAGAGCT  
TCCTCAGCTGGGCGCGCGCTGAGCGTGGGCTGAGCGGCTGGCAGCGGCTTGGCATCGGCATCGT  
GGGGGACGCTGGCGTGCGGGCGACCGCCAGCAGCCCCGACTATTCGTGGGCATGATCCTGATTCTCATC  
TTCGCGGAGGTGCTCGGCTCTACGGTCTCATCGTGCCTCTATCCTCTCCACAAAGTAGACCTCTCCG  
AGCCACCGAGCCACAGAATATTATGTAAAGACACCCCTCCTCATCCAGAACGAACAGCCTGACACATA  
CGCAGGGGCGCGCGCGCCCGCAGTAGTTGGTCTTGTACATGCGCAGTGTCTAGTGGCCATCGTCTGTTTC  
CCCGGCTTGGCGCGCGCGCGCGCGCTGCGGTGGACATCTGGGCGCACTCATCGCCCTCCAGGCGCGCG  
CGCCCCACCCCTTGTCTAGTGTCTGTGTATGCGGATGATTTAGAATTGTCAATTTCTCTTTACTGGATGTTT  
ATTTATAAAGATCTGGCCTGTTCTGCGTCTGCGGAGCGGCGCTTGTCTCCAGCTATCTATAACCTTAG  
CTAGAGTGTGCGCTTGTGGGTTCTGTGCTGAGACTTCTGGATGGAGCGCGCTCACCGCCGGGCGCG  
TGGCCTGCGCGGAGCTGTGTCCAATAAAGTTCTTGGATGTGAAAAAAAAAAAAAAAAAAAAA  
AAAAAA

Human ATP6V0C mRNA sequence - var6 (public gi: 34534447) (SEQ ID NO: 350)

Figure 36 part - 10

TTTATGCTTGTGTTTCTGCAACTGCTTTCTGGCCCCCACTCTTTCTGTGGCTGCTGAGCCTAGTGCCGC  
 TCACAGGTCTGCCTTCTGCAGTCTGGTCAAGCTTGGCCTCCGGAAGTCCAGGGTGTCTCATGGTATT  
 CCGCTCCTGGTGGCCATCCCTTTCTTCCCTGTGCTCCCTCTTGGTGGCTCCTCCCCCTGCCAGCCACATGA  
 TTCTTCTGCTGCCCTCTGTAGAAAAGGGCCTGGCTCACTTCTGCCTCTGGTGGACTACTGGCCTCACA  
 GGGTCCACTACTTGGGTTGTGAGTTCCCTGTATTAGTCTCCTGCCAACGTGTCTGCCATGCTCTGGTC  
 TCTTGTGCATACATGATGCAGTTGGATGTGGTCTGGGCTGCAGTGGGAGCCCCCTAAAATGCACTGTA  
 ATTGCTCTATATGCTTGCCAGGGAATAATGCACTGTAACCAGGAGTTCAAGACAGGCGCTGGGACAGGC  
 CCTGGGCCCCAGTCTGCAGGTGCAGTGGGTGTGGCATGGCATGTCTGGGCACCTCCAGGGTGGCGTGGA  
 GGAGGCGGTGTGGCTCCCTGGCCAGGTCTCAGCCTCCTTCTCCCTCTATAGTCACTCCCTGGATACCC  
 AGCACCGTCTGCTTGGGTGCCTCTGCAGGTGCTATCCAGAGCCCTTGTCTTATTGCCTTGTTTTTCTGTG  
 ACTCCTCTCTCCCGCCAACTTGGGATACTTGTCTGTGAAGCCCTTCCCCAGCACCCCTTCTCCGCTCTC  
 CTGGAGCATGTCTCTGTGCCTGGAGGTCACCGCGCTGTGTCTCACCCTGCTGAGTGTCTGGGACACAG  
 GGTAGGCAAGTTTTGTGGCCAAATATATCAATAAAATATGAAGAGGAATGGTAGGGGTAGTCTGGTCC  
 CTTCCACTCTGACATATGTAGTCTTCTGCAGGTCAAGCTGTTTGTGTGTGTGTGTGTGTGTGTGTGT  
 GTGTGTGTGTGTCTGTCTGAGAGATTCACTCTTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGT  
 CTGGAGTGCAGTGGCGTGATCTGACTCACTGCAACCTCCACTCCTGGGTTCAGGCGATTCTCCTGCCTC  
 AGCCTCCCTAGTAAC TGGGATGACAGGCATGCGCCACCACTCCTGGCTAATTTTTGTATTTTTAGTAGAG  
 ACGAGGTTTACCATTGTTACCCAGGCTAATCTCGAATTCGGATCACCTGAGGTCAAGGATTGGAGACCA  
 GCCTGGCCAAACATGGTGAACCCCATCTCTACTAAAAATACAAAGAAAGTTAGCCAGGTCTGGTGGCG  
 TGCCTGTAATCCCACTTACTCGGGAGGCTGAGGCAGGAGAATCACTTGAACCCAGGAGGCAGAGGTTACA  
 GTGAGCGAGATCGCGCCACTGCACTCCACCCTGGGCAACAAGAGCGAAAACCTGTCTCAAAAAAAAAAA  
 AAAAAATTTTTATTGAGGTATTCTTCCAGTAGAAGGTTAGTAAGTTTTAATGAAACCATTAATAAATT  
 ACACCTCCAGAAAATAGATGACATCAGTGCCCTTGTCTACTTTCTCAGTCTCACTATTGCTTTGAGGG  
 CCCAGTACTGAACTTGTCTTGTGAGTTTGT  
 GCTTCTGAAGCAGTCTAGGTAAACTAGCCAGGCAGGTAGTTGTGGACTGGTGATTTTCAAAGCCCCAC  
 TTTAGAGATCAGGCCACAGCTTTTATATCGCACAGGACACATCAGCCTGAGCTGCTGCCTCATGCCTGT  
 TTCCCCAGGAACCTCACTCCTTTGGTAGAACCTTGGGATTTTAGAAATGTGGCTTTTCCATAACTCATT  
 TACTCCAACAGTTGAAGTTACACACATTGCTCCCAAATTTGGAATAGACCACAGTACCTTACCTTTTAT  
 TCCCCATCTGGCCTTTACCTTCTTTGCTTCACTGGTTGAAAACAGTTGCCATATTCAAAGTATAGTAGAT  
 TTCAACCTCACACAAATGACAAGTCCCATTTTACAATCCTAGGAAGGCCCAATTTTCAATTTACGCGC  
 CAGGGGGCTGCAGTTGGAGGCCGAGGGCAGCCCTCTGCTCACTGAATGTCTTGCATGTGCTGACTGCTG  
 CCCGCACTGTGAACATGCCCCACCGCCAGGCCAGCACTGCTTGTGGGTGAG

Human ATP6V0C mRNA sequence - var7 (public gi: 30583148) (SEQ ID NO: 351)  
 ATGTCCGAGTCCAAGAGCGGCCCGAGTATGCTTCGTTTTCGCCGTCATGGGCGCCTCGGCCGCCATGG  
 TCTTCAGCGCCTTGGCGCTGCCTATGGCACAGCCAAAGAGCGGTACCGGCATTGCGGCCATGTCTGTGAT  
 GCGGCCGAGCAGATCATGAAGTCCATCATCCAGTGGTTCATGGCTGGCATCATCGCCATCTACGGCCTG  
 GTGGTGGCAGTCTCATCGCCAACTCCCTGAATGACGACATCAGCCTCTACAAGAGCTTCTCCAGCTGG  
 GCGCGGCCTGAGCGTGGGCTGAGCGGCTGGCAGCCGGCTTTGCCATCGGCATCGTGGGGGACGCTGG  
 CGTGGCGGGCACCGCCAGCAGCCCCGACTATTCTGTTGGCATGATCCTGATTCTCATCTTCGCCGAGGTG  
 CTCGGCCTCTACGGTCTCATCGTCCCTCATCTCTCCACAAAGTAG

Human ATP6V0C protein sequence - var1 (public gi: 30583149) (SEQ ID NO: 225)  
 MSSEKSGPEYASFFAVMGASAAMVFSALGAAAGTAKSGTGIAAMSVMRPEQIMKSIIPVVMAGIIAIYGL  
 VVAVLIANSLNDDISLYKSFLQLGAGLSVGLSGLAAGFAIGIVGDAGVRGTAQQPRLFVGMILILIFAEL  
 LGLYGLIVALILSTK

Human ATP6V0C protein sequence - var2 (public gi: 34534448) (SEQ ID NO: 226)  
 MILPAALCRKGPGLPASGGLLASQGPLLGLLSSLYSVSCQRVCHALVSCAYMMQLDVLGLQWEPKMH  
 CNCSICLPKKCTVTRSSGQALGQALGPSLQVHWVLAHVWAPPGWRGGGRVAPWPRSQPPSSLYSHSLD  
 TQHRRGLCLRCYPEPLSYCLVFL

Human ATP6V0C pray sequence - var1 (SEQ ID NO: 352)  
 CCGCATGGAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCC  
 AAGCAGTGGTATCAACGCAGAGTGGCCATTTGGGGGGTCTGCGGTGCTGGTATTTAGAGCGCAGCGGCTG  
 ACGGGCCGATCGCCTTCGCCGCCGCCGCCGCCGCAACCTTCGTGCCCGGCCCGCTCCTCGCCCCCGCCTC  
 CGCCACCGCCTCGGCCCGCAGAGCTTGCCCCCTCCCCCATGTCTGGCCGCTCGGCCTCTAGAGGGTGG  
 GCATCGATACGGGATCCATCGAGCTCGAGCTGCAGATGAATCGTAGATACTGAAAAACCCCGCAAGTTCA  
 CTTCAACTGTGCATTCTGTGCA

Unigene Name: CBLB Unigene ID: Hs.3144 Clone ID: 3GD\_114

Figure 36 part - 11

Human CBL-B mRNA sequence - var1 (public gi: 4757919) (SEQ ID NO: 353)  
CTGGGTCCTGTGTGCCACAGGGGTGGGGTGTCCAGCGAGCGGTCTCCTCCTCTGCTAGTGTGCTGC  
GGCGTCCCGCGGCTCCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTGTCTTTGACGGTAATTGT  
TGCGTTTCCACGTCTCGGAGGCTGCGCGCTGGGTGCTCCTTCTTCGGGAGCGAGCTGTTCTCAGCGAT  
CCCCTCCAGCCGGGGCTCCCCACACACACTGGGCTGCGTGCCTGTGGAGTGGGACCCGCGCACACGCG  
TGTCTCTGGACAGCTACGGCGCCGAAAGAACTAAAATTCCAGATGGCAAACCTCAATGAATGGCAGAAACC  
CTGGTGGTCGAGGAGGAAATCCCCGAAAAGGTCGAATTTGGGTATTATTGATGCTATTTCAGGATGCAGT  
TGGACCCCTAAGCAAGCTGCCGAGATCGCAGGACCGTGGAGAAGACTTGAAGCTCATGGACAAAGTG  
GTAAGACTGTGCCAAAATCCCAAACCTTCAGTTGAAAAATAGCCCACCATATATACTTGATATTTTGCTG  
ATACATATCAGCATTACGACTTATATTGAGTAAATATGATGACAACCAGAACTTGCCCACTCAGTGA  
GAATGAGTACTTTAAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGCAATAAGACTCTTTAAA  
GAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCAGAAACCTGTCCTTATCT  
TCAGTCACATGCTGGCAGAAATCAAAGCAATCTTTCCCAATGGTCAATTCAGGGAGATAACTTTTCGTAT  
CACAAAAGCAGATGCTGCTGAATCTGGAGAAAGTTTGGAGACAAAACCTATCGTACCATGGAAAGTA  
TTCAGACAGTGCCTTCATGAGGTCCACAGATTAGCTCTAGCCTGGAAGCAATGGCTCTAAAAACAACAA  
TTGATTTAACTTGCAATGATTACATTTAGTTTGAATTTGATATTTTACCAGGCTGTTTCAGCCTTG  
GGGCTCTATTTTGCGGAATTGGAATTTCTAGCTGTGACACATCCAGGTTACATGGCATTCTCAGATAT  
GATGAAGTTAAAGCACGACTACAGAAATATAGCACCACCCGGAAGCTATATTTCCGGTTAAGTTGCA  
CTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTACAGACCATACCTCATAA  
CAAGCCCTTATTTCAAGCCCTGATTGATGGCAGGGAAGGATTTTATCTTTATCTGATGGGAGGAGT  
TATAATCCTGATTTAACTGGATTATGTGAACCTACACCTCATGACCATATAAAAGTTACAGAGCAAAAT  
ATGAATTATATTGTGAAATGGGCTCCACTTTTCAGCTCTGTAAGATTGTGTCAGAGAATGACAAAGATGT  
CAAGATTGAGCCTTGTGGGCATTTGATGTGCACCTCTTGCCCTACGGCATGGCAGGAGTGGGATGGTCAG  
GGCTGCCCTTTCTGTCGTTGTGAAATAAAAGGAACCTGAGCCCATATCGTGGACCCCTTGTATCCAAGAG  
ATGAAGGCTCCAGGTGTTGCAGCATCATTGACCCCTTTGGCATGCCGATGCTAGACTTGGACGACGATGA  
TGATCGTGAGGAGTCCCTGATGATGAATCGGTTGGCAAACGTCGGAAGTGCAGTACAGGCAGAACTCA  
CCAGTCACATCACCAGGATCCTCTCCCTTGCCAGAGAAGAAAGCCACAGCCTGACCCACTCCAGATCC  
CACATCTAAGCCTGCCACCCGTGCCTCCTCGCTGGATCTAATTCAGAAAGGCATAGTTAGATCTCCCTG  
TGGCAGCCCAACAGGTTACCAAAGTCTTCTCCTTGATGGTGAGAAAACAAGATAAACCCTCCAGCA  
CCACCTCCTCCCTTAAGAGATCTCCTCCACCGCCACCTGAAAGACCTCCACCAATCCACAGACAATA  
GACTGAGTAGACATCCATCATGTGGAAGCGTGCTTCCAGAGACCCGCAATGCCTTGAAGCATG  
GTGCCCTCGGGATGTGTTTGGGACTAATCAGCTTGTGGGATGTGCGACTCCTAGGGAGGGCTCTCCAAAA  
CCTGGAATCACAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCTTATGC  
GGAAACACAGACGCCATGATTGCCTTTAGAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGGAAAGTGA  
AGAATATGATGTTCTCCTCCCGGCTTCTCCTCCTCCTCAGTTACCACCCTCCTCCCTAGCATAAAGTGT  
ACTGGTCCGTTAGCAAATTTCTTTTCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACA  
AGATTCTTTCATCCACCCCTGTTTCCCTGAATTCACAACCATCTCATTGTCTAATGTAACACCTCCTGT  
TCGGTCTGTGATAATGGTCACTGTATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAAC  
ATCCCTGACTTAAGCATATATTTAAAGGGTACGTATAGAATATAATTTCTTTGTGATGTACATCTTAAT  
GGTCAGAAATTAAGGCAAAATTCATGCCATTGTACTGAAAATACATTAAGGTTTTGTGTTATCCTCTA  
GGAGATGTTTTGATTACAGCCTCTGATCCCGTGCCATTACCACTGCCAGGCCTCCAACCTCGGACAAATC  
CAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGATCTTCTCATCCCTCCATTAGGTTGAAA  
CCTTTAAAAAAGTTTTGAACAACCCACCCCTCCTTCTTTAATTTCAGAATTTTCAGAATTCAGAGTTCA  
GTATAACACAGACTCACTGGGTTGTGAATTTGCCTGAAATTTGAATGGGTTCTCCAGGTGCCGTTGACTC  
CCAAGTTACAGAGACCATTAATCATGTAGATGATTAAGGTAGTAGTGTAGTAGTTGGGCATCAGTCAGG  
TTTTAAGCAAGTTGTTTTGTCCATACTAAATGTAGTCTAAAAACACATGAGAGCTTTGTGCTCTAGTAGT  
TTTGAAGTGATGACTTGAAGTGTGAGATTTTCTTTAAGTATAATAATTTCTTAATAAATATGAACCTGCT  
TTTCTTGACAGCATGAGCACCAGTCCACTTACGCTAATTAATATGCAAAATTAATAGTTGTATGTAG  
AGAAGTGATAATAAATCTGTTTTATTCTAATCATTACAACCTGTAACACATTCAAAAAAAAAA

Human CBL-B mRNA sequence - var2 (public gi: 23273908) (SEQ ID NO: 354)  
AGCGGAGTGCTGCTGCGGCGTCCCGCGGCTCCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTGT  
TCTTGACGGTAATTGTTGCGTTTCCACGTCTCGGAGGCTGCGCGCTGGGTGCTCCTTCTTCGGGAGCG  
AGCTGTTCTCAGCGATCCCACTCCAGCCGGGGCTCCCCACACACACTGGGCTGCGTGCCTGTGGAGTGG  
GACCCGCGCACACGCGTGTCTCTGGACAGCTACGGCGCCGAAAGAACTAAAATTCAGATGGCAAACCTCA  
ATGAATGGCAGAAACCTGGTGGTCGAGGAGGAAATCCCCGAAAAGGTCGAATTTTGGGTATTATTGATG  
CTATTTCAGGATGCAGTTGACCCCTAAGCAAGCTGCCGAGATCGCAGGACCGTGGAGAAGACTTGGAA  
GCTCATGGACAAAGTGGTAAGACTGTGCCAAAATCCCAAACCTCAGTTGAAAAATAGCCCACCATATATA  
CTTGATATTTTGCCTGATACATATCAGCATTTACGACTTATATTGAGTAAATATGATGACAACAGAAAC  
TTGCCAACTCAGTGAGAAATGAGTACTTTAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGC  
AATAAGACTCTTTAAAGAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCACA

Figure 36 part - 12

AAACTGTCCCTTATCTTTCAGTCACATGCTGGCAGAAATCAAAGCAATCTTTCCCAATGGTCAATTCCAGG  
GAGATAACTTTTCGTATCACAAAAGCAGATGCTGCTGAATCTGGAGAAAGTTTTTGGAGACAAAATAT  
CGTACCATGGAAAGTATTGACACAGTGCCTTTCATGAGTCCACCAGATTAGCTCTGGCCTGGAAGCAATG  
GCTCTAAATCAACAATTGATTTAACTTGCAATGATTACATTTTCAGTTTTTGAATTTGATATTTTACCA  
GGCTGTTTTCAGCCTTGGGGCTCTATTTGCGGAATTGGAATTTCTTAGCTGTGACACATCCAGGTTACAT  
GGCATTCTCACATATGATGAAGTTAAAGCAGACTACAGAAATATAGCACCAAAACCCGGAAGCTATATT  
TTCCGGTTAAGTTGCACTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTAC  
AGACCATACCTCATAACAAGCCCTTATTTCAAGCCCTGATTGATGGCAGCAGGGAAGGATTTTATCTTTA  
TCCTGATGGGAGGAGTTATAATCCTGATTTAACTGGATTATGTGAACCTACACCTCATGACCATATAAAA  
GTTACACAGGAACAATATGAATTATATTGTGAATGGGCTCCACTTTTCAGCTCTGTAAGATTTGTGCAG  
AGAATGACAAAGATGTCAAGATTGAGCCTTGTGGGCATTGATGTGCACCTCTGCCTTACGGCATGGCA  
GGAGTCGGATGGTCAGGGCTGCCCTTTCTGTCTGTGAAATAAAAGGAACTGAGCCCATATCGTGGAT  
CCCTTTGATCCAAGAGATGAAGGCTCCAGGTGTGTCAGCATCATTGACCCCTTTGGCATGCCGATGCTCG  
ACTTGGACGACGATGATGATCGTGAGGAGTCCTTGATGATGAATCGGTTGGCAAACGTCGGAAGTGAC  
TGACAGGCAGAACTCACCAGTCACATCACCAGGATCCTCTCCCCTTGCCCAGAGAAGAAAGCCACAGCCT  
GACCCACTCCAGATCCACATCTAAGCCTGCCACCCGTGCCTCCTCGCCTGGATCTAATTCAGAAAGGCA  
TAGTTAGATCTCCCTGTGGCAGCCCAACGGGTTCAACAAAGTCTTCTCCTTGCATGGTGAGAAAAACAAGA  
TAAACCACTCCACGACCCACTCCTCCCTTAAGAGATCCTCCTCCACCGCCACCTGAAAGACCTCCACCA  
ATCCCACCAGACAATAGACTGAGTAGACACATCCATCATGTGGAAGCGTGCCTTCCAAAGACCCGCCAA  
TGCTCTTGAAGCATGGTGGCTCGGGATGTGTTGGGACTAATCAGCTTGTGGGATGTGACTCCTAGG  
GGAGGGCTCTCCAAACCTGGAATCACAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCT  
GACCCAGTGCTTATGCGGAAACACAGACGCCATGATTTGCCTTTAGAAGGAGCTAAGGTCTTTTCCAATG  
GTCACCTTGGAAAGTGAAGATGATGTTCTCTCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCCCTCCT  
CCCTAGCATAAAGTGTACTGGTCCGTTAGCAAAATCTCTTTTCAGAGAAAACAAGAGACCCAGTAGAGGAA  
GATGATGATGAATACAAGATTCCTTCATCCACCCCTGTTTCCCTGAATTCAACAACATCTCATTGTCTATA  
ATGTAAACCTCCTGTTTCGGTCTTGTGATAATGGTCACTGTATGTGAATGGAACACATGGTCCATCTTC  
AGAGAAGAAATCAAACATCCCTGACTTAAGCATATATTTAAAGGGAGATGTTTTTGTATTGAGCCTCTGAT  
CCCGTGCCATTACCACTGCCAGGCCTCCAACCTCGGACAATCCAAAGCATGGTCTTCACTCAACAGGA  
CGCCCTCTGATTATGATCTTCTCATCCCTCCATTAGGTGAAGATGCTTTTGATGCCCTCCCTCCATCTCT  
CCCACCTCCCCACCTCCTGCAAGGCATAGTCTCATTGAACATTCAAAACCTCCTGGCTCCAGTAGCCGG  
CCATCCTCAGGACAGGATCTTTTCTTCTCCTTCAGATCCCTTTGTTGATCTAGCAAGTGGCCAAGTTC  
CTTTGCCTCCCGCTAGAAAGGTTACCAGGTGAAAATGTCAAAACTAACAGAACATCACAGGACTATGATCA  
GCTTCTTTCATGTTTCAGATGGTTCACAGGCACCCAGCCAGACCCCTAAACCACGACCCGCGCAGGACTGCA  
CCAGAAATTCACCACAGAAAACCCCATGGGCTGAGGCGGCATTGGAATGTCGATGCAAAAATTGCAA  
AACTCATGGGAGAGGGTTATGCCTTTGAAGAGGTGAAGAGAGCCCTAGAGATAGCCAGAATAATGTCGA  
AGTTGCCCGGAGCATCTCCGAGAATTTGCCTTCCCTCCTCCAGTATCCCCACGTCTAAATCTATAGCAG  
CCAGAACTGTAGACACCAAAATGGAAGCAATCGATGTATTCCAAGAGTGTGGAATAAAGAGAAGTGA  
ATGGAATTCAAGAGAGAAGTGTCTCCTCCTCGTGTAGCAGCTTGAGAAGAGGCTTGGGAGTGCAGCTTCT  
CAAAGGAGACCGATGCTTGTCTCAGGATGTGACAGCTGTGGCTTCCCTGTTTTGTAGCCATATTTTTA  
AATCAGGGTTGAAGTACAAAAATAATTTAAAGACGTTTACTTCCCTTGAACCTTGAACCTGTGAATGC  
TTTACCTTGTTTACAATTTGGCAAAGTTGCAGTTTGTCTTGTGTTTTAGTTTGTGTTTTGGTGTGTT  
TGATACCTGTACTGTGTTCTTCACAGACCTTTGTAGCGTGGTCAGGCTGTGTAACATTTCCACCAA  
CTCTCTGTCTGCCATCAACAGCTAAATCATTTATTCATATGGATCTCTACCATCCCCATGCCTTGCC  
CAGGTCCAGTTCCATTTCTCTCATTCACAAGATGCTTTGAAGGTTCTGATTTTCACTGATCAAACTAAT  
GCAAAAAAAAAGTATGTATTCTTCACTACTGAGTTTCTTCTTTGGAACCATCACTATTGAGAGATGGG  
AAAAACCTGAATGTATAAGCATTATTTGTCAATAAACTGCCTTTTGTGAAGGGGTTTTTCAAAAAAAA  
AAAAAAA

Human CBL-B mRNA sequence - var3 (public gi: 862406) (SEQ ID NO: 355)

CTGGGTCTGTGTGTGCCACAGGGGTGGGGTGTCCAGCGAGCGGTCTCCTCCTCCTGCTAGTGCTGCTGC  
GGCGTCCCGCGGCCTCCCCGAGTCGGGCGGGAGGGGAGCGGGTGTGGATTGTCTTGACGGTAATGT  
TGCGTTTCCACGTCTCGGAGGCCCTGCGCGCTGGGTGCTCCTTCTTCGGGAGCGAGCTGTTCTCAGCGAT  
CCCACTCCACGCGGGGCTCCCCACACACTGGGCTGCGTGTGAGTGGGACCCGCGCACACGCG  
TGCTCTGGACAGCTACGGCGCCGAAAGAACTAAATTTCCAGATGGCAAACCTCAATGAATGGCAGAAACC  
CTGGTGGTCGAGGAGGAAATCCCCGAAAGGTGCAATTTGGGTATTATTGATGCTATTTCAGGATGCAGT  
TGGACCCCTTAAGCAAGCTGCCGAGATCGCAGGACCGTGGAGAAGACTTGAAGCTCATGGACAAAGTG  
GTAAGACTGTGCCAAATCCCAAACCTTCAGTTGAAAAATAGCCACCATATATACTTGATATTTGCGTG  
ATACATATCAGCATTTACGACTTATATTGAGTAAATATGATGACAACCAGAACTTGCCCACTCAGTGA  
GAATGAGTACTTTAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGCAATAAGACTCTTTAA  
GAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCAAAAACCTGTCCCTTATCT  
TCAGTCACATGCTGGCAGAAAATCAAGCAATCTTTCCCAATGGTCAATTCAGGGAGATAACTTTTCGTAT  
CACAAAAGCAGATGCTGCTGAATCTGGAGAAAGTTTCTTTGGAGACAAACTATCGTACCATGGAAAGTA  
TTCAGACAGTGCCTTCATGAGGTCCACCAGATTAGCTCTAGCCTGGAAGCAATGGCTCTAAATCAACAA

Figure 36 part - 13



TTGATTTAACTTGCAATGATTACATTTTCAGTTTTTGAATTTGATATTTTTACCAGGCTGTTTCAGCCTTG  
 GGGCTCTATTTTGGCGAATTGGAATTTCTTAGCTGTGACACATCCAGGTTACATGGCATTCTCAGCATAT  
 GATGAAGTTAAAGCAGCACTACAGAAATATAGCACAAACCCGGAAGCTATATTTCCGGTTAAGTTGCA  
 CTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTACAGACCATACTTACATGA  
 CAAGCCCTTATTTCAAGCCCTGATTGATGGCAGCAGGGAAGGATTTATCTTTATCTGTATGGGAGGAGT  
 TATAATCCTGATTTAACTGGATTATGTGAACCTACACCTCATGACCATATAAAAGTTACACAGGAACAAT  
 ATGAATTATATGTGAAATGGGCTCCACTTTTCAGCTCTGTAAGATTTGTGCGAGAGAATGACAAAGATGT  
 CAAGATTGAGCCTTGTTGGGCATTTGATGTGCACCTCTTGCCCTTACGGCATGGCAGGAGTCGGATGGTCAG  
 GGCTGCCCTTTCTGTGCTTGTGAAATAAAAGGAAGTGAAGCCATAATCGTGACCCCTTTTGATCCAAAGAG  
 ATGAAGGCTCCAGGTGTTGCGCATCATTTGACCCCTTTGGCATGCCGATGCTAGACTTGGACGACGATGA  
 TGATCGTGAGGAGTCCTTGATGATGAATCGGTTGGCAAACGTCGGAAGTGCACTGACAGGCAGAACTCA  
 CCAGTCACATCACCAGGATCTCTCCCCTTGCCAGAGAAGAAAGCCACAGCCTGACCCACTCCAGATCC  
 CACATCTAAGCCTGCCACCCGTGCCCTCGCTGGATCTAATTGAGAAAGGCATAGTTAGATCTCCCTG  
 TGGCAGCCCAACAGGTTACCAAAGTCTTCTCCTTGATGGTGAGAAAACAAGATAAAACCACTCCACGCA  
 CCACCTCTCCCTTAAGAGATCTCTCCACCGCCACCTGAAAGACCTCCACCAATCCCACAGACAATA  
 GACTGAGTAGACACATCCATCATGTGGAAGCGTGCCCTCCAGAGACCCGCAATGCCTCTTGAAGCATG  
 GTGCCCTCGGGATGTGTTTGGGACTAATCAGCTTGTGGGATGTGCACTCTAGGGGAGGGCTCTCCAAAA  
 CTTGGAATCAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCCTTATGC  
 GGAAACACAGACGCCATGATTGCTCTTAGAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGGAAAGTGA  
 AGAATATGATGTTCTCCCGGCTTTCTCCTCCTCCCTCCAGTTACCACCTCCTCCTAGCATAAAGTGT  
 ACTGGTCCGTTAGCAAATCTCTTTCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACA  
 AGATTCCTTCATCCACCTGTGTTCCCTGAATTCACAACCATCTCATTGTGATGAATGTAAACCTCCTGT  
 TCGGTCTGTGATAATGTCACGTGATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAAC  
 ATCCCTGACTTAAGCATATATTTAAAGGGAGATGTTTGTGATTGAGCCTCTGATCCCGTGCCATTAACAC  
 CTGCCAGGCTCCAACCTCGGACAAATCAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGA  
 TCTTCTCATCCCTCCATTAGGTGAAGATGCTTTTGTGCTCCTCCCTCCATCTCTCCACCTCCCCACCT  
 CCTGCAAGGCATAGTCTCATTGAACATTCAAACCTCCTGGCTCCAGTAGCCGGCCATCCTCAGGACAGG  
 ATCTTTTCTTCTTCCCTCAGATCCCTTTGTTGATCTAGCAAGTGCCCAAGTCTCTTTGCTCCTGTCTAG  
 AAGGTTACCAGGTGAAATGTCAAACCTAACAGAACATCACAGGACTATGATCAGCTTCTTTCATGTTCA  
 GATGGTTACAGGCACCAGCCAGACCCCTAAACACGACCGCGCAGGACTGCACCAGAAATTCACCA  
 GAAAACCCCATGGGCTCGAGGCGGCATTGGAAATGTGATGCAAAAATGCAAACTCATGGGAGAGGG  
 TTATGCCTTTGAAGAGGTGAAGAGAGCCTTAGAGATAGCCAGAAATATGTGCAAGTTGCCCGGAGCATC  
 CTCGAGAAATTTGCCCTTCCCTCCTCCAGTATCCCAAGCTTAAATCTATAGCAGCCAGAACTGTAGACAC  
 CAAAATGGAAGCAATCGATGTATTTCCAAGAGTGTGGAATAAAGAGAACTGAGATGGAATTCAGAGAG  
 AAGTGTCTCCTCCTCGTGTAGCAGCTTGAGAAGAGGCTTGGGAGTGCAGCTTCTCAAAGGAGACCGATG  
 TTGCTCAGGATGTGACAGCTGTGGCTTCTTGTGTTTGTGCTAGCCATATTTTAAATCAGGGTTGAAGT  
 ACAAAAATAATTTAAAGACGTTTACTTCCCTTGAACCTTTGAACCTGTGAAATGCTTACCTTGTGTTTACA  
 TTTGGCAAAGTTGAGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTG  
 TCTTTCACAGACCTTTGTAGCGTGGTCAGGTCTGCTGAACATTTCCACCAACTCTCTGTGCTGCCAT  
 ATCAACAGCTAAATCATTTATTCATATGGATCTCTACCATCCCATGCCTTGCCAGGTCCAGTTCCATT  
 TCTCTCATTACAGATGCTTTGAAGGTTCTGATTTTCACTGATCAAACTAATGCAAAAAAAAAAAGTA  
 TGTATTCTTCACTACTGAGTTTCTTCTTTGGAAACCATCATTGAGAGATGGGAAAAACCTGAATGTA  
 TAAAGCATTATTTGTCAATAAACTGCCCTTTTGTAAAGGGTTTTTCACATAAAAAAAAAAAAAA

Hunan CBL-B mRNA sequence - var4 (public gi: 862408) (SEQ ID NO: 356)

CTGGGCTCTGTGTGTGCCACAGGGGTGGGGTGTCCAGCGAGCGGTCTCCTCCTGCTAGTGTGCTGCG  
 GCGTCCCGCGGCCTCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTGTCTTTGACGGTAATTGT  
 TGGCTTTCCACGCTCTCGGAGGCCTGCGCGCTGGGTTGCTCCTTCTTCCGGAGCGAGCTGTTCTCAGCGAT  
 CCCACTCCCAGCCGGGGCTCCCCACACACTGGGCTGCGTGCCTGTGGAGTGGGACCCGCGCACACGCG  
 TGTCTCTGGACAGCTACGGCGCGGAAAGAACTAAATTCAGATGGCAAACTCAATGAATGGCAGAAACC  
 CTGGTGGTTCGAGGAGGAATCCCGAAAAGGTGCAATTTTGGGTATTATTGATGCTATTACAGGATGCAGT  
 TGGACCCCTTAAGCAAGCTGCCGCGAGATCGCAGGACCGTGGAGAAGACTTGGAAAGCTCATGGACAAAGTG  
 GTAAGACTGTGCCAAATCCCAAACCTTCAGTTGAAAAATAGCCACCATAATATACTTGATATTTTGCTG  
 ATACATATCAGCATTTACGACTTATATTGAGTAAATATGATGACAACCAGAACTTGCCCAACTCAGTGA  
 GAATGAGTACTTTAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGCAATAAGACTCTTTAAA  
 GAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCAAAAACGTGCCCTTATCT  
 TCAGTCACATGCTGGCAGAAATCAAAGCAATCTTTCCCAATGGTCAATTCAGGGAGATAAATTCGTAT  
 CACAAAAGCAGATGCTGCTGAATCTGGAGAAAGTTTTTGGAGACAAAACCTATCGTACCATGGAAAGTA  
 TTCAGACAGTGCCTTCATGAGGTCCACCAGATTAGCTCTAGCCTGGAAGCAATGGCTCTAAAATCAACAA  
 TTGATTTAACTTGCAATGATTACATTTTCAGTTTTTGAATTTGATATTTTTACCAGGCTGTTTCAGCCTTG  
 GGGCTCTATTTTGGCGAATTGGAATTTCTTAGCTGTGACACATCCAGGTTACATGGCATTCTCAGCAT  
 GATGAAGTTAAAGCAGCACTACAGAAATATAGCCAAACCCGGAAGCTATATTTCCGGTTAAGTTGCA  
 CTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTACAGACCATACTCATAA

Figure 36 part - 14

CAAGCCCTTATTTCAAGCCCTGATTGATGGCAGCAGGGAAGGATTTTATCTTTATCCTGATGGGAGGAGT  
TATAATCCTGATTTAACCTGGATTATGTGAACCTACACCTCATGACCATATAAAAAGTTACACAGGAACAAT  
ATGAATTATATTGTGAAATGGGCTCCACTTTTTCAGCTCTGTAAGATTGTGTCAGAGAATGACAAAGATGT  
CAAGATTGAGCCTTGTGGGCATTTGATGTGCACCTCTTGCCTTACGGCATGGCAGGAGTCGGATGGTCAG  
GGCTGCCCTTTCTGTCTGTGTGAAATAAAAGGAACTGAGCCCATAAATCGTGGACCCCTTTGATCCAAGAG  
ATGAAGGCTCCAGGTGTTGCAGCATCATTTGACCCCTTTGGCATGCCGATGCTAGACTTGGACGACGATGA  
TGATCGTGAGGAGTCCTTGATGATGAATCGGTGGCAAACGTCGAAAGTGCACTGACAGGCAGAACTCA  
CCAGTCACATCACCAGGATCCTCTCCCCTTGGCCAGAGAAGAAAGCCACAGCCTGACCCACTCCAGATCC  
CACATCTAAGCCTGCCACCCGTGCCTCCTCGCCTGGATCTAATTCAGAAAGGCATAGTTAGATCTCCCTG  
TGGCAGCCCAACAGGTTACCAAAGTCTTCTCCTTGATGGTGAGAAAACAAGATAAACCCTCCCAGCA  
CCACCTCCTCCCTTAAGAGATCCTCCTCCACCGCCACCTGAAAGACCTCCACCAATCCCACCAGACAATA  
GACTGAGTAGACACATCCATCATGTGGAAGCGTGCCCTTCCAGAGACCCGCCAATGCCTCTTGAAGCATG  
GTGCCCTCGGGATGTGTTTGGGACTAATCAGCTTGTGGGATGTCGACTCCTAGGGGAGGGCTCTCCAAA  
CCTGGAATCACAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCCTTATGC  
GGAAACACAGACGCCATGATTTGCCTTTAGAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGAAGTGA  
AGAAATATGATGTTTCTCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCTCCTCCCTAGCATAAAGTGT  
ACTGGTCCGTTAGCAAATCTCTTTTTCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACA  
AGATTCTTTCATCCCACCTGTTTCCCTGAATTCACAACCATCTCATGTGCATAATGTAAACCTCCTGT  
TCGGTCTGTGATGATGTTCACTGTATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAAC  
ATCCCTGACTTAAGCATATATTTAAAGGGAGATGTTTTTGAATTCAGCCTCTGATCCCGTGCCATTACCAC  
CTGCCAGGCCTCCAACCTCGGGACAATCCAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGA  
TCTTCTCATCCCTCCATTAGGTTGAAACCTTTTAAAAAGTTTTGAACAACCCACCCCTCCTTCTTTTAAAT  
TTCAGAATTTTTCAGAAATTCAGAGTTTCAATATAACACAGACTCACTGGGTTGTGAATTTGCCTGAAATTTG  
AATGGGTTCTCCAGTTCGGGTGCTCCCAAGTTCACAGAGACCATTAATCCATGTAGATGATTAAGGTAG  
TAGTGTAGTAGTTGGGCATCAGTCAGGTTTTAAGCAAGTTGTTTTGTCCATACTAAATGTAGTCTAAAA  
CACATGAGAGCTTTGTGCTTAGTAGTTTTGAAGTGATGACTTGAAGTGTGAGATTTCTTTAAGTATA  
ATAATTCTTAATAAATATGAACCTTGCTTTTCTGTCAGCATGAGCACCAGTTCCACTTACGCTAATTAAT  
TAGCAAAATTAATAGTTGTATGTAGAGAACTGATAATAAATCTGTTTTATTCTAATCATTACAACCTG  
TAACACATTCAAAAAAAAAA

Human CBL-B mRNA sequence - var5 (public gi: 862410) (SEQ ID NO: 357)

CTGGGTCTGTGTGTGCCACAGGGGTGGGGTGTCCAGCGAGCGGTCTCCTCCTCCTGCTAGTGCTGCTGC  
GGCGTCCCAGCGGCTCCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTTGTCTTGACGGTAATTGT  
TGCGTTTCCACGTCTCGGAGGCCTGCGCGCTGGGTGCTCCTTCTTCGGGAGCGAGCTGTTCTCAGCGAT  
CCCATCCCAGCGGGGCTCCCCACACACTGGGCTGCGTGGTGTGGAGTGGGACCCGCGCACAGCGG  
TGCTCTGGACAGCTACGGCGCCGAAAGAACTAAATTCAGATGGCAAACTCAATGAATGGCAGAAACC  
CTGGTGGTTCGAGGAGGAAATCCCCGAAAGGTGCAATTTTGGGTATTATTGATGCTATTTCAGGATGCAGT  
TGGACCCCTTAAGCAAGCTGCCGAGATCGCAGGACCGTGGAGAAGACTTGAAGCTCATGGACAAAGTG  
GTAAGACTGTGCCAAATCCCAAACCTTCAGTTGAAAAATAGCCACCATATATACTTGATATTTTGCCTG  
ATACATATCAGCATTACGACTTATATTGAGTAAATATGATGACAACCAGAACTTGCCTCACTCAGTGA  
GAATGAGTACTTTAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGCAATAAGACTCTTTAAA  
GAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCACAAAACCTGTCCCTTATCT  
TCAGTCACATGCTGGCAGAAATCAAAGCAATCTTTCCCAATGGTCAATTCAGGGAGATAACTTTTCGTAT  
CACAAAAGCAGATGCTGCTGAATCTGGAGAAAGTTTTTGGAGACAAAACCTATCGTACCATGGAAAGTA  
TTCAGACAGTGCCTTCATGAGGTCCACCAGATTAGCTCTAGCCTGGAAGCAATGGCTCTAAAATCAACAA  
TTGATTTAACTTGCAATGATTACATTTTCACTTTTGAATTTGATATTTTACCAGGCTGTTTCAGCCTTG  
GGGCTCTATTTTGGGAATTTGAATTTCTTAGCTGTGACACATCCAGGTTACATGGCATTCTCACATAT  
GATGAAGTTAAAGCAGACTACAGAAATATAGCACCAAAACCGGAAGCTATATTTTCCGGTTAAGTTGCA  
CTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTACAGACCATACTCATAA  
CAAGCCCTTATTTCAAGCCCTGATTGATGGCAGCAGGGAAGGATTTTATCTTTATCCTGATGGGAGGAGT  
TATAATCCTGATTTAACTGGATTATGTGAACCTACACCTCATGACCATATAAAAGTTACACAGGAACAAT  
ATGAATTATATTGTGAAATGGGCTCCACTTTTTCAGCTCTGTAAGATTGTGTCAGAGAATGACAAAGATGT  
CAAGATTGAGCCTTGTGGGCATTTGATGTGCACCTCTTGCCTTACGGCATGGCAGGAGTCGGATGGTCAG  
GGCTGCCCTTTCTGCTGTTGTGAAATAAAAGGAACTGAGCCATAATCGTGGACCCCTTTGATCCAAGAG  
ATGAAGGCTCCAGGTGTTGAGCATCATTTGACCCCTTTGGCATGCCGATGCTAGACTTGGACGACGATGA  
TGATCGTGAGGAGTCTTGTGATGATGATCGGTTGGCAACGTCGGAAGTGCACTGACAGGCAGAACTCA  
CCAGTCACATCACCAGGATCCTCTCCCCTTGGCCAGAGAAGAAAGCCACAGCCTGACCCACTCCAGATCC  
CACATCTAAGCCTGCCACCCGTGCCTCCTCGCCTGGATCTAATTCAGAAAGGCATAGTTAGATCTCCCTG  
TGGCAGCCCAACAGGTTACCAAAGTCTTCTCCTTGATGGTGAGAAAACAAGATAAACCCTCCCAGCA  
CCACCTCCTCCCTTAAGAGATCCTCCTCCACCGCCACCTGAAAGACCTCCACCAATCCCACCAGACAATA  
GACTGAGTAGACATGCTTATGATGGAAGCGTGCCTTCCAGAGACCCGCAATGCCTCTTGAAGCATG  
GTGCCCTCGGGATGTGTTTGGGACTAATCAGCTTGTGGGATGTGACTCCTAGGGGAGGGCTCTCAAAA  
CCTGGAATCACAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCTTATGC

Figure 36 part - 15



GGAAACACAGACGCCATGATTTGCCTTTAGAAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGGAAGTGA  
AGAATATGATGTTCTCTCCCGGCTTTCTCTCTCTCCAGTTACCAACCTCTCCCTAGCATAAAGTGT  
ACTGGTCCGTTAGCAAATTTCTTTTCCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACA  
AGATTCCTTCATCCCAACCTGTTTCCCTGAATTCACAACCATCTCATTGTGCATAATGTAAACCTCCTGT  
TCGGTCTGTGATAATGGTCACTGTATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAAC  
ATCCCTGACTTAAGCATATATTTAAAGGGTACGTATAGAATATAATTTCTTTGTGATGTACATCTTAAT  
GGTCAGAAATTTAAAGGCAAATTTTCATGCCATTGTACTGAAAATACATTAAGGTTTGTGTTATCCTCTA  
GGAGATGTTTTGATTAGCCTCTGATCCCGTGCCATTACCACCTGCCAGGCCCTCAACTCGGGACAATC  
CAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGATCTTCTCATCCCTCCATTAGGTTGAAA  
CCTTTAAAAAGTTTTGAACAACCCACCCCTCCTTCTTTAATTTTCAAGATTTTCAAGATTTCAAGATTTCA  
GTATAACACAGACTCACTGGGTTGTGAATTTGCCTGAAATTTGAATGGGTTCTCCAGGTGCCGGTGACTC  
CCAAGTTCACGAGACCATTACTCCATGTAGATGATTAAAGTAGTAGTGTAGTAGTTGGGCATCAGTCAGG  
TTTTAAGCAAGTGTGTTTGTCCATACTAAATGTAGTCTAAAAACACATGAGAGCTTTGTGCTCTAGTAGT  
TTTGAAGTGTGACTTGAAGTGTGAGATTTTCTTTAAGTATAATAATTCTTAATAAATATGAACATTGCT  
TTTCTTGACGATGAGCACCAGTTCCACTTACGCTAATTAATATGCAAAATTAATAGTTGTATGTAG  
AGAAGTGAATAAATCTGTTTTATTCTAATCATTACAACCTGTAACACATTCAAAAAAAAAA

Human CBL-B mRNA sequence - var6 (public gi: 21753192) (SEQ ID NO: 358)

AGTGCTGCTGCGGCGTCCCGCGGCCCTCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTTGTCTTG  
ACGGTAATGTTGGCTTTCCACGTCCTCGAGGCCCTGCGCGCTGGGTTGCTCCTTCTTCGGGAGCGAGCTG  
TTCTCAGCGATCCCACTCCAGCCGGGGCTCCCCACACACTGGGCTGCGTGTGGAGTGGGACCC  
GCGCACACGCGTGTCTCTGGACAGCTACGGCGCCGAAAGAACTAAAATTCAGATGGCAAACCTCAATGAA  
TGGCAGAAACCTGGTGGTCGAGGAGGAAATCCCGAAAAGGTGCAATTTGGGTATTATTGATGCTATT  
CAGGATGCAGTTGGACCCCTAAGCAAGCTGCCGCAGATCGCAAAACCTGGAATCACAGCGAGTTCAAAT  
GTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCTTATGCGGAAACACAGACGCCATGATTTGC  
CTTTAGAAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGGAAAGTGAAGAAATATGATGTTCTCTCCCGCT  
TTCTCCTCCTCCTCCAGTTACCACCCCTCCTCCTTAGCATAAAGTGTACTGGTCCGTTAGCAAATTTCTCTT  
TCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACAAGATTCCTTCATCCCAACCTGTTT  
CCCTGAATTCACAACCATCTCATTGTGCATAATGTAAACCTCCTGTTTCGGTCTTGTGATAATGGTCACTG  
TATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAACATCCCTGACTTAAGCATATATTTA  
AAGGGAGATGTTTTTGAATTCAGCCTCTGATCCCGTGCCATTACCACCTGCCAGGCCCTCAACTCGGGACA  
ATCCAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGATCTTCTCATCCCTCCATTAGGTGA  
AGATGCTTTTGTATGCCCTCCCTCCATCTCTCCACCTCCCCACCTCCTGCAAGGCATAGTCTCATTGAA  
CATTCAAACCTCCTGGCTCCAGTAGCCGGCCATCCTCAGGACAGGATCTTTTTCTTCTCTCTTCAGATC  
CCTTTGTGTGATAGCAAGTGGCCAAGTTCCTTTGCCTCCTGCTAGAAGGTTACCAGGTGAAAATGTCAA  
AACTAAGCAACATCACAGGACTATGATCAGCTTCCCTTCATGTTTCAGATGGTTCACAGGCATCAGCCAGA  
CCCCCTAAACCACGACCGCGCAGGACTGCACCAGAAATTCACCACAGAAAACCCCATGGGCCCTGAGGCGG  
CATTGGAAGTGTGATGCAAAAATTCGCAAACTCATGGGAGAGGGTTATGCCTTTGAAGAGGTGAAGAG  
AGCCTTAGAGATAGCCAGAATAATGTGCAAGTTGCCCGGAGCATCTCCGAGAATTTGCCTTCCCTCCT  
CCAGTATCCCCAGCTCTAAATCTATAGCAGCCAGAACTGTAGACACCAAAATGGAAGCAATCGATGTAT  
TCCAAGAGTGTGGAATAAAGAGAACTGAGATGGAATTCAGAGAGAAGTGTCTCCTCCTCGTGTAGCAG  
CTTGAGAAGAGGCTTGGGAGTGCAGCTTCTCAAAGGAGACCGATGCTTGCTCAGGATGTGACAGCTGTG  
GCTTCTTGTGTTTTGTAGCCATATTTTTAAATCAGGGTTGAAGTACAAAAATAATTTAAAGACGTTTA  
CTTCCCTTGAACCTTTGAACCTGTGAAATGCTTTACCTTGTGTTACAGTTTGGCAAAGTTGCAGTTTGTCT  
TGTTTTAGTTTAGTTTTGTTTTGGTGTGTTTGTACCTGTACTGTGTTCTTCACAGACCCCTTTGTAGCGTG  
GTCAGGTCTGCTGTAACATTTCCCACTAATCTCTTGTGTCACATCAACAGCTAAATCATTATTATCAT  
ATGGATCTCTACCATCCCCATGCCTTGCCAGGTCCAGTTCCATTTCTCTCATTCAAGATGCTTTGAA  
GTTCTGATTTTCAACTGATCAAACTAATGCAAAAAAAAAAAAAAAAAAAAAAAAAAAG

Human Cbl-b mRNA sequence - var 7 (SEQ ID NO: 359)

CGTNTTGGNANNCACTACAGGGGATGTTTAATACACACTCACAATGCGCATGATGNTATAACTATCTATTCNATGAT  
G  
TAAGATACCCCACTCAAACCCATAAAAAAGAGCATCTTTAATACGACTCACTATANGGCGAGCGCACGCCATGGCAGGT  
A  
CCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGNGAATTCACCCAAGCNGTGGTATCAACGCANAG  
T  
GGACTCTGACCCANTGCTTATGCGGAAACACAGACGCCATGATTTGCCTTTAGAAGGAGCTAAGGTCTCTTCCAATGGT  
C  
ACCTTGGAAGTGAAGAATATGATGTTCTCTCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCCCTNCTCCCTAGCATAA  
G  
GTACTGGTCCGTTAGCAAATTTCTTTTCCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACAAGATTC  
C

Figure 36 part - 16

WO 2004/078130

TTCATCCCACCTGTTTCCCTGAATTCACAACCATCTCATTGTCATAATGTAAACCTCCTGTTCCGGTCTTGTGATAAT  
G  
GTCACGTATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAACATCCCTGACTTAAGCATATATTTAAA  
G  
GGTGAAGATGCTTTTGATGCCCTCCCTCCATCTCTCCACCTCCCCACCTCCTGCAAGGCATAGTCTCATTGAACATT  
C  
AAACCTCCTGGCTCCAGTAGCCGCCATCCTCAGGACAGGATCTTTTTCTTCTTCTTCAGATCCCTTTGTTGATCTA  
G  
CAAGTGGCCAAGTTCCTTTGCCTCCCGCTAGAAGGTTACCAGGTGAAAATGTCAAACTAACAGGACATCACAGGACTA  
T  
GATCAGCTTCCTTCATGTTTCAGATGGTTCACAGGCACCAGCCAGACCCCTAAACCACGACCGCGCAGGACTGCACCAG  
A  
AATTCACCACAGAAAACCCCATGGGCTGAGGCGGCATTGGAAAATGTGATGCAAAAATTGCAAACTCATGGGAGAG  
G  
GTTATGCCCTTTGAAGAGGTGAAGAGAGCCTTAGAGATAGCCCAGAATAATGTGCAAGTTGCCCGGAGCATCCTCCGAGA  
A  
TTTGCCTTCCCTCCTCCAGTATCCCCACGTCTAAATCTATAGCAGCCAGAACTGTAGACACCAAAATGGAAAGCAATCG  
A  
TGTATTCCAAGAGTGTGAAAATAAAGAGAACTGAGATGGAATTCAAGAGAGAAGTGTCTCCTCCTCGTGTAGCAGCTTG  
A  
GAAGAGGCTTGGGAGTGCAGCTTCTCAAAGAAAACCGATGCTTGCTCAGGATGTCTNACAGCTGNGGNCNCTTGTGTTT  
T  
GCTAGCCATTTTTTTAAATNAGGGTTGAACTNGANAAAANTATTTAAAAACGTTTACCTCCCTTGAACCTTTGAACCTGG  
G  
AAAGNC

Human Cbl-b Protein sequence - var 7 (SEQ ID NO: 361)  
MRKRRHDLPLEGAKVSSNGHLGSEEDVPPRLSPPPVPTLLPSIKCTGPLANSLSEKTRDPVEEDDDEYKIPSSHPV  
S  
LNSQPSHCHNVKPPVRSCDNGHCLNGTHGPSSEKKSNIPLDSIYLKGEDAFDALPPSLPPPPPPARHSLIEHSKPPGS  
S  
SRPSSGQDLFLLPSDPFVDLASGQVPLPPARRLPGENVKTNRTSQDYDQLPSCSDGSQAPARPPKPRPRRTAPEIHHRK  
P  
HGPEAALENVDAKIAKLMGEGYAFEEVKRALEIAQNNVEVARSLREFAFPPPVSPRLNL

Human cbl-B clone3Gd114 (partial sequence) (SEQ ID NO: 360)  
ACTCTGACCCAGTGCTTATGCGGAAACACAGACGCCATGATTTGCCTTTA  
GAAGGAGCTAAGGTCTCTTCCAATGGTCACCTTGGAAGTGAAGAATATGA  
TGTTCTTCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCTCCTCCCTA  
GCATAAAGTGTACTGGTCCGTTAGCAAATTCTCTTTCAGAGAAAACAAGA  
GACCCAGTAGAGGAAGATGATGATGAATACAAGATTCTTTCATCCCACCC  
TGTTTCCCTGAATTCACAACCATCTCATTGTCATAATGTAAACCTCCTG  
TTCGGTCTTGTGATAATGGTCACTGTATGCTGAATGGAACACATGGTCCA  
TCTTCAGAGAAGAAATCAAACATCCCTGACTTAAGCATATATTTAAAGGG  
TGAAGATGCTTTTGATGCCCTCCCTCCATCTCTCCACCTCCCCACCTC  
CTGCAAGGCATAGTCTCATTGAACATTCAAACCTCCTGGCTCCAGTAGC  
CGGCCATCCTCAGGACAGGATCTTTTTCTTCTTCTTCAGATCCCTTTGT  
TGATCTAGCAAGTGGCCAAGTTCCTTTGCCTCCCGCTAGAAGGTTACCAG  
GTGAAAATGTCAAACTAACAGGACATCACAGGACTATGATCAGCTTCCT  
TCATGTTTCAGATGGTTCACAGGCACCAGCCAGACCCCTAAACCACGACC  
GCGCAGGACTGCACCAGAAATTCACCACAGAAAACCCCATGGGCTGAGG  
CGGCATTGGAATAATGTCGATGCAAAAATTGCAAACTCATGGGAGAGGGT  
TATGCCCTTTGAAGAGGTGAAGAGAGCCTTAGAGATAGCCAGAATAATGT  
CGAAGTTGCCCGGAGCATCCTCCGAGAATTTGCCTTCCCTCCTCCAGTAT  
CCCCACGTCTAAATCTATAGCAGCCAGAACTGTAGACACCAAAATGGAAA  
GCAATCGATGTATTCCAAGAGTGTGGAAATAAAGAGAACTGAGATGGAAT  
TCAAGAGAGAAGTGTCTCCTCCTCGTGTAGCAGCTTGAGAAGAGGCTTGG  
GAGTGCAGCTTCTCAAAGAAAACCGATGCTTGCTCAGGATGTGACAGCT  
GTGGCTTCCTTGTTTTTGTAGCCATTTTTTAAATCAGGGTTGAACTGG  
AAAAAATTATTTAAAAACGTTTACCTCCCTTGAACCTTTGAACCTGGGAAA

Figure 36 part - 17

GGC

Human CblB protein in 3Gd114 Translation of cbl-B clone3Gd114 starting at base pair 3 (SEQ ID NO: 398)

SDPVLMRKHRRHDLPLEGAKVSSNGHLGSEEDVPPRLSPPPPVTLLPS  
IKCTGPLANSLSEKTRDPVEEDDDEYKIPSSHPVSLNSQPSHCHNVKPPV  
RSCDNGHCMLNGTHGPSSEKKSNIPLDSIYLKGEDAFDALPPSLPPPPPP  
ARHSLIEHSKPPGSSSRPSSGQDLFLLPSDPFVDLASGQVPLPPARRLPG  
ENVKTNRTSQDYDQLPSCSDGSQAPARPPKPRPRRTAPEIHHRKPHGPEA

Human CBL-B Protein sequence - var1 (public gi: 4757920) (SEQ ID NO: 227)

MANSMNGRNPGGRGGNPRKGRILGIIDAIQDAVGPPKQAAADRRTVEKTKWLMKDVVRLCQNPQLQLKNS  
PPYILDILPDTYQHLRLILSKYDDNQKLAQLSENEYFKIYIDSLMKKSKRAIRLFKEGKERMYYEQSQDR  
RNLTKLSLIFSHMLAEIKAIFFNGQFQGDNFRITKADAAEFWRKFFGDKTIVPWKVFROCLHEVHQISS  
LEAMALKSTIDLTCDNYISVFEFDIFTRLFQPWGSILRNWNFLAVTHPGYMAFLTYDEVKARLQKYSTKP  
GSYIFRLSCTRLGQWAIQYVTGDGNILQTI PHNKPLFQALIDGSREGFYLYPDGRSYNPDLTGLCEPTH  
DHIKVTQEYELYCEMGSTFQLCKICAENDKDVKIEPCGHLMTSCLTAWQESDGGQCPFCRCEIKGTEP  
IIVDPFDPDEGRSCCSIIDPFMGPMMLDLDDDDREESLMNRLANVRKCTDRQNSPVTSPGSSPLAQR  
KPQDPDLQIPHLSLPPVPPRLDLIQGIVRSPCGSPTGSPKSSPCMVVKQDKPLPAPPPPLRDP PPPPPPE  
RPPPIPPDNRLSRHIIHVESVPSRDPMPLEAWCPRDVFGTNQLVGCRLLEGESPKPGITASSNVNGRHS  
RVGSDPVLMRKHRRHDLPLEGAKVFSNGHLGSEEDVPPRLSPPPPVTLLPSIKCTGPLANSLSEKTRD  
PVEEDDDEYKIPSSHPVSLNSQPSHCHNVKPPVRSCDNGHCMLNGTHGPSSEKKSNIPLDSIYLKGTYRI

Human CBL-B Protein sequence - var2 (public gi: 23273909) (SEQ ID NO: 228)

MANSMNGRNPGGRGGNPRKGRILGIIDAIQDAVGPPKQAAADRRTVEKTKWLMKDVVRLCQNPQLQLKNS  
PPYILDILPDTYQHLRLILSKYDDNQKLAQLSENEYFKIYIDSLMKKSKRAIRLFKEGKERMYYEQSQDR  
RNLTKLSLIFSHMLAEIKAIFFNGQFQGDNFRITKADAAEFWRKFFGDKTIVPWKVFROCLHEVHQISS  
LEAMALKSTIDLTCDNYISVFEFDIFTRLFQPWGSILRNWNFLAVTHPGYMAFLTYDEVKARLQKYSTKP  
GSYIFRLSCTRLGQWAIQYVTGDGNILQTI PHNKPLFQALIDGSREGFYLYPDGRSYNPDLTGLCEPTH  
DHIKVTQEYELYCEMGSTFQLCKICAENDKDVKIEPCGHLMTSCLTAWQESDGGQCPFCRCEIKGTEP  
IIVDPFDPDEGRSCCSIIDPFMGPMMLDLDDDDREESLMNRLANVRKCTDRQNSPVTSPGSSPLAQR  
KPQDPDLQIPHLSLPPVPPRLDLIQGIVRSPCGSPTGSPKSSPCMVVKQDKPLPAPPPPLRDP PPPPPPE  
RPPPIPPDNRLSRHIIHVESVPSKDPMPLEAWCPRDVFGTNQLVGCRLLEGESPKPGITASSNVNGRHS  
RVGSDPVLMRKHRRHDLPLEGAKVFSNGHLGSEEDVPPRLSPPPPVTLLPSIKCTGPLANSLSEKTRD  
PVEEDDDEYKIPSSHPVSLNSQPSHCHNVKPPVRSCDNGHCMLNGTHGPSSEKKSNIPLDSIYLKGDVFD  
SASDPVPLPPARPPTRDNPKHGSSLNRTSPDYDLLIPPLGEDAFDALPPSLPPPPPPARHSLIEHSKPPG  
SSSRPSSGQDLFLLPSDPFVDLASGQVPLPPARRLPGENVKTNRTSQDYDQLPSCSDGSQAPARPPKPRP  
RRTAPEIHHRKPHGPEAALENVDAKIAKLMGEGYAFEEVKRALEIAQNNVEVARSLREFAFPPVPSPRL  
NL

Human CBL-B Protein sequence - var3 (public gi: 862407) (SEQ ID NO: 229)

MANSMNGRNPGGRGGNPRKGRILGIIDAIQDAVGPPKQAAADRRTVEKTKWLMKDVVRLCQNPQLQLKNS  
PPYILDILPDTYQHLRLILSKYDDNQKLAQLSENEYFKIYIDSLMKKSKRAIRLFKEGKERMYYEQSQDR  
RNLTKLSLIFSHMLAEIKAIFFNGQFQGDNFRITKADAAEFWRKFFGDKTIVPWKVFROCLHEVHQISS  
LEAMALKSTIDLTCDNYISVFEFDIFTRLFQPWGSILRNWNFLAVTHPGYMAFLTYDEVKARLQKYSTKP  
GSYIFRLSCTRLGQWAIQYVTGDGNILQTI PHNKPLFQALIDGSREGFYLYPDGRSYNPDLTGLCEPTH  
DHIKVTQEYELYCEMGSTFQLCKICAENDKDVKIEPCGHLMTSCLTAWQESDGGQCPFCRCEIKGTEP  
IIVDPFDPDEGRSCCSIIDPFMGPMMLDLDDDDREESLMNRLANVRKCTDRQNSPVTSPGSSPLAQR  
KPQDPDLQIPHLSLPPVPPRLDLIQGIVRSPCGSPTGSPKSSPCMVVKQDKPLPAPPPPLRDP PPPPPPE  
RPPPIPPDNRLSRHIIHVESVPSRDPMPLEAWCPRDVFGTNQLVGCRLLEGESPKPGITASSNVNGRHS  
RVGSDPVLMRKHRRHDLPLEGAKVFSNGHLGSEEDVPPRLSPPPPVTLLPSIKCTGPLANSLSEKTRD  
PVEEDDDEYKIPSSHPVSLNSQPSHCHNVKPPVRSCDNGHCMLNGTHGPSSEKKSNIPLDSIYLKGDVFD  
SASDPVPLPPARPPTRDNPKHGSSLNRTSPDYDLLIPPLGEDAFDALPPSLPPPPPPARHSLIEHSKPPG  
SSSRPSSGQDLFLLPSDPFVDLASGQVPLPPARRLPGENVKTNRTSQDYDQLPSCSDGSQAPARPPKPRP  
RRTAPEIHHRKPHGPEAALENVDAKIAKLMGEGYAFEEVKRALEIAQNNVEVARSLREFAFPPVPSPRL  
NL

Human CBL-B Protein sequence - var4 (public gi: 862409) (SEQ ID NO: 230)

MANSMNGRNPGGRGGNPRKGRILGIIDAIQDAVGPPKQAAADRRTVEKTKWLMKDVVRLCQNPQLQLKNS  
PPYILDILPDTYQHLRLILSKYDDNQKLAQLSENEYFKIYIDSLMKKSKRAIRLFKEGKERMYYEQSQDR

Figure 36 part - 18

RNLTKLSLIFSHMLAEIKAIIPNGQFQGDNFRITKADAAEFWRKFFGDKTIVPWKVFRQCLHEVHQISS  
LEAMALKSTIDLTCNDYISVFEFDIFTRLFQPWGSILRNWNFLAVTHPGYMAFLTYDEVKARLQKYSTKP  
GSYIFRLSCTRLGQWAIQVYVTDGNILQTI PHNKPLFQALIDGSREGFYLYPDGRSYNPDLTGLCEPTPH  
DHIKVTQEYELYCEMGSTFQLCKICAENDKDVKIEPCGHLMTCSCLTAWQESDGGQCPFCRCEIKGTPE  
IIVDPFDPDRDEGSRCCSIIDPFMPMLDLDDDDREESLMNRLANVRKCTDRQNSPVTSPGSSPLAQR  
KPQPDPLQIPHLSLPPVPPRLDLIQKIVRSPCGSPTGSPKSSPCMVVRKQDKPLPAPPPPLRDP PPPPE  
RPPPIPPDNRLSRHIIHVESVPSRDPMPLEAWCPRDVFQTNQLVGCRLLEGESPKPGITASSNVNGRHS  
RVGSDPVLMRKHRRHDLPLEGAKVFSNHLGSEEDVPPRLSPPPVTTLLPSIKCTGPLANSLSSEKTRD  
PVEEDDDDEYKIPSSHPVSLNSQPSHCHNVKPPVRSCDNHCHMLNGTHGPSSEKKSNI PDL SIYLKGDVFD  
SASDPVPLPPARPPTDRNPKHGSSLNRTPSDYDLLIPPLG

Unigene Name: CENTB1 Unigene ID: Hs.337242

Human CENTB1 mRNA sequence - var1 (public gi: 495679) (SEQ ID NO: 37)

GGGGTGAGAGCTCCTCCTAGGACACCCCTTTCCCTTGGGGAAAGAAATTGTGCCCCAGGCCCTTCCCCG  
CGGAGGTCCCTCTCCTCCTTCCCCCTCATCTCCCTTCTGGGACAGAAAGTGCCTCCACCTGCATCCCC  
AGGGGCCCCGCTCCAGGCCCCGCTGGCCCCACAGCAGGCAAGCTGAGATGACGGTCAAGCTGAGATTTCG  
AGGAGTGTCTCAAGGACTACCCCGTTTCCGAGCCTCTATTGAGCTGGTGAAGCCGAAGTGTGAGAATT  
GGAGACCCGTCTGAAAAGCTCCTGAAACTGGGCACTGGTCTCCTGGAAGTGGGCGCCATTACCTTGCT  
GCCAGCGCGCCTTCTGTCTCGGCATTTGTGACCTGGCCCCGCTGGGTCCACCAGAGCCCATGATGGCGG  
AGTGTCTGGAATAATCACCGTGAGCCTGAACCACAAGCTGGACAGCCATGCGGAGCTTCTAGATGCCAC  
CCAACACACACTGCAGCAGCAGATCCAGACCTGTCTCAAGGAAGGTCTGCGGGGTTTCCGAGAGGCTCGC  
CGGGATTCTGGCGGGGGCTGAGAGCCTGGAGCTGCCCTGACCCACAACCGCAGAGGTTCCAGGCGCC  
GGGCCCCAGGAGGAGAGGAGGAGGAGCTGCTTTGAGGACGGCTCGAGCTGGGTACCGGGGACGGGCACT  
GGATTATGCCCTGCAGATCAACGTGATTGAGGACAAGAGGAAGTTTGACATCATGGAGTTTGTGCTGCGT  
TTGGTGGAGGCCAGGCTACCCATTTCCAGCAGGGCCATGAGGAGCTGAGCCGGCTGTCCAGTATCGAA  
AGGAGCTGGGCGCCAGTTGACACAGCTGGTCTTGAATTCAGCACGAGAGAAGAGGGACATGGAGCAGAG  
ACACGTGCTGCTGAAACAGAGGAGCTGGGTGGGAGGAGGAGCCAGAACCAAGCTTAAGAGAGGGGCTGGT  
GGCCTGGTGATGGAAGGACATCTCTTCAAACGGGCCAGCAACGCATTTAAGACCTGGAGCAGACGCTGGT  
TCACCATTGAGAGCAACCACTGGTTTACCAGAAGAAGTACAAGGACCCCTGTGACTGTGGTGGTGATGA  
CCTTCGCTCTGTCACAGTGAACCTCTGCCCTGACTCAGAAAGGCGGTTCTGCTTTGAGGTGGTGTCCACC  
AGCAAGTCTGCTCCTCCAGGCTGACTCAGAGCGCTCCTGCAGCTGTGGGTGAGTGTGTCAGAGCA  
GCATTGCTTCTGCTTCACTCAGTCCGCTGCTGCTGAGCAGCCCCGGGGTCCAGGCCAGGGCTCAGGACA  
CCTGGCCATAGGCTCTGCTGCCACCCCTGGGCTCTGGTGAATGGCCAGGGGAAGGGAGCCTGGGGGAGTC  
GGGCACGTGGTGGCCAGGTCCAGAGTGTGGATGGCAATGCCAGTGTGCGACTGCCGGGAGCCAGCCC  
CGGAGTGGGCCAGCATCAACCTTGGTGTACCCCTCTGCATTGAGTGTCCGGCATCCACAGGAGCCTTGG  
TGTTCACTTCTCAAAGTCCGGTCTCTGACCTTGACTCATGGGAGCCAGAAGTGAAGCTCATGTGT  
GAGCTGGGAAATGTCTCATCAACAGATCTATGAGGCCCGCGTGGAGGCCATGGCAGTGAAGAAACCAG  
GGCCAGCTGCTCCCGGAGGAGAAGGAGGCTGGATTACGCTAAATACGTGGAGAAGAAGTCTCTGAC  
CAAGCTGCCTGAGATTGAGGGCGAAGAGGTGGCCGGGGCGCCCAAGGGGGCAGCCTCCTGTGCCCCCA  
AAGCCTTCCATCAGGCCCGGGCAGGGAGCTTGAGATCCAAGCCAGAGCCCCCTCTGAGGACCTGGGAA  
GCCTGCACCTGGGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCATCTCTTCCACCATGGCTGATGC  
CCTTGCCCATGGAGCTGATGTCAACTGGGTCAATGGGGCCAAGATAATGCCACACCGCTGATCCAGGCC  
ACAGCTGCTAATCTCTTCTGGCCTGTGAGTTTCTCCTCCAGAACGGGGCGAACGTGAACCAAGCGGACA  
GTGCGGGCGGGGGCCGCTGCACACGCAACCAATTCTGGCCACACGGGGCTCGCCTGCCTGTTCTTGAA  
ACGGGGAGCTGATCTGGGGGCTCGAGACTCTGAAGGCAGGGACCCTCTGACCATCGCCATGGAACAGCC  
AACGCTGACATCGTACCCTGTACGACTGGCAAAGATGAGGGAGGCTGAAGCGGGCCAGGGGAGGAGCAG  
GAGATGAGACGTATCTTGACATCTTCCGCGACTTCTCCCTCATGGCGTCAAGCAGACCCGAGAGGCTGAG  
CCGTGCGAGTCATGACCTCCACACGCTGTGACCCGAGGCCACGGGGCCCGCCTGCCTCCCTTCCCCG  
CCACCGGGCCCTCTGCCATTAAAGCCTCCGTGCTTCTGCTCTTCC

Human CENTB1 mRNA sequence - var2 (public gi: 17391288) (SEQ ID NO: 38)

GAGCTCCTCCTAGGACACCCCTTTCCCTTGGGGAAAGGATTGTGCCCCAGGCCCTTCCCGCGGAGGT  
CCCTCTCCTCCTTCCCTCTCATCTCCCTTCTCGGGACAGAAAGTGCCTCCACCTGCATCCCCAGGGGCC  
CGGCCTCCAGGGCCCCGCTGGCCCCACAGCAGGCAAGCTGAGATGACGGTCAAGCTGGATTTCGAGGAGTG  
TCTCAAGGACTCACCCCGTTTCCGAGCCTCTATTGAGCTGGTGAAGCCGAAGTGTGAGAATTGGAGACC  
CGTCTGGAAGCTCCTGAAACTGGGCACTGGTCTCCTGGAAGTGGGCGCCATTACCTTGCTGCCAGCC  
GCGCCTTCTGTGTCGGCATTTGTGACCTGGCCCCGCTGGGTCCACCAGAGCCCATGATGGCGGAGTGTCT  
GGAAAATTCACCGTGAGCCTGAACCACAAGCTGGACAGCCATGCGGAGCTTCTAGATGCCACCAACAC  
ACACTGCAGCAGCAGATCCAGACCTGGTCAAGGAAGTCTGCGGGGTTTCCGAGAGGCTCGCGGGGATT  
TCTGGCGGGGGGCTGAGAGCCTGGAGGCTGCCCTGACCCACAACCGCAGAGGTTCCAGGCGCCGGGGCCA  
GGAGGCAGAAGAGGAGGAGGCTGCTTTGAGGACGGCTCGAGCTGGGTACCGGGGACGGGCACTGGATTAT

Figure 36 part - 19

GCCCTGCAGATCAACGTGATTGAGGACAAGAGGAAGTTTGACATCATGGAGTTTGTGCTGCGTTTGGTGG  
 AGGCCCCAGGCTACCCATTTCCAGCAGGGCCATGAGGAGCTGAGCCGGCTGTCCAGTATCGAAAGGAGCT  
 GGGCGCCAGTTGCACAGCTGGTCTTGAATTGAGCAGAGAGAAGAGGGACATGGAGCAGAGACACGTG  
 CTGCTGAAACAGAAGGAGCTGGGTGGGGAGGAGCCAGAACCAAGCTTAAGAGAGGGGCTGGTGGCCTGG  
 TGATGGAAGGACATCTCTTCAAACGGGCCAGCAACGCATTTAAGACCTGGAGCAGACGCTGGTTACCAT  
 TCAGAGCAACCAACTGGTTTACCAGAAGAAGTACAAGGACCCTGTGACTGTGGTGGTGGATGACCTTCGT  
 CTCTGCACAGTGAAACTCTGCCCTGACTCAGAAAGGCGGTTCTGCTTTGAGGTGGTGTCCACCAGCAAGT  
 CCTGCCTCCTCAGGCTGACTCAGAGCGCCTCCTGCAGCTGTGGGTGAGTGCTGTGCAGAGCAGCATTCG  
 TTCTGCCTTCAGTCAGGCTCGCCTTGATGACAGCCCCCGGGTCCAGGCCAGGGCTCAGGACACCTGGCC  
 ATAGGCTCTGTGCCACCTGGGCTCTGGTGGAAATGGCCAGGGGAAGGGAGCCTGGGGGAGTCGGGGCAG  
 TGGTGGCCAGGTCCAGAGTGTGGATGGCAATGCCAGTGCTGCGACTGCCGGGAGCCAGCCCCGGAGTG  
 GGCCAGCATCAACCTTGGTGTACCCCTCTGCATTGAGTGTCCGGCATCCACAGGAGCCTTGGTGTTCAC  
 TTCTCAAAGTCCGGTCTCTGACCTTGACTCATGGGAGCCAGAAGTGAAGCTCATGTGTGAGCTGG  
 GAAATGTATCATCAACAGATCTATGAGGCCCGCGTGGAGGCCATGGCAGTGAAGAAACCAGGGCCCCAG  
 CTGCTCCCGGCAGGAGAAGGAGGCTGATTACGCTAAATACGTGGAGAAGAAAGTTCTGACCAAGCTG  
 CCTGAGATTCAGGGCGAAGAGGTGGCCGGGGGCGCCCAAGGGGGCAGCCTCCTGTGCCCCCAAAGCCTT  
 CCATCAGGCCCCCGCCAGGGAGCTTGAGATCCAAGCCAGAGCCCCCTCTGAGGACCTGGGAAGCCTGCA  
 CCCTGGGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCATCTCTTCCACCATGGCTGATGCCCTTGCC  
 CATGGAGCTGATGTCAACTGGGTCAATGGGGGCCAAGATAATGCCACACCGCTGATCCAGGCCACAGCTG  
 CTAATTCTCTTCTGGCCTGTGAGTTCTCCTCCAGAACGGGGCGAACGTGAACCAAGCGGACAGTGCAGG  
 CCGGGGCCCCGTGCACACGCAACCATTTCTGGCCACACGGGGCTCGCCTGCCTGTTTCTGAAACGGGGA  
 GCTGATCTGGGGGCTCGAGACTCTGAAGGCAGGAGCCCTCTGACCATCGCCATGGAAACAGCCAAACGCTG  
 ACATCGTCACCTGCTACGACTGGCAAGATGAGGGAGGCTGAAGCGGCCAGGGGCAGGCAGGATGA  
 GACGTATCTTGACATCTTCCGCGACTTCTCCTCATGGCGTCAGACGACCCGGAGAAGCTGAGCCGTGCG  
 AGTCATGACCTCCACACGCTGTGACCCGAGGCCACGGGGCCGCGCCTGCCTCCCTTCCCCGCCACCGG  
 GCCCTCTGCCATTAAAGCCTCCGTGCTTCGCTCAAAAAAAAAAAAAA

Human CENTB1 mRNA sequence - var3 (public gi: 34533014) (SEQ ID NO: 39)

ATGTCAGCGTTGGCTGTTTCCATGGCGATGGTCAGAGGGTCCCTGCCTTCAGAGTCTCGAGCCCCCAGAT  
 CAGCTCCCCGTTTCAGGAACAGGCAGGCGAGCCTGGAGAGAAGAGCCAGGGTCAGCCGGCCGCAACTT  
 CTCCAGCCTTCTCCCATGCCATCATCCCTACCCCGTGTGGCCAAGAATGGTTGCGTGGTGCAGCGGG  
 CCCCCGCCCCGACTGTCCGCTTGGTTCAGTTCGCCCCGTTCTGGAGGAGAACTCACAGGCCAGAAGAG  
 AATTCTGCATGGAGAAGTCGAGAAGGGGGGTTGAGGGTGGCATCCCTAGTGGTGGATTTCAAGATGTCTT  
 AGGGTGGCGCCAGTTCAAGAAATGGGAGGGTGGAGTGTGTAATCAGGAGTGTGGAAGGGGTTACAGCTA  
 ACTGTAAACCAAGCTAGGCTTGGCTTAGCTCTTTGCATGTATTATATATAAAATCCATAGTACAGCTTT  
 TGAGGTATGTTACTATTTTACAGATGAGGCTGAGAGGTTAATAACTTGTAAAGTCTCCTGTAGGCCGG  
 GCACAGTGGCTCAGCCAGTAATCCAGCACTTTGGGAGGCCGAGGCGGGTGGATCACAGGGTCAGGAGA  
 TCCAGACCATCTGGCTAGCACGGTGGAGCCCTATCTCTACTAACAATACAAGAAATTAGCCGGGCATGC  
 TGGCTGGCGCCTGTGGTCCCAGCTACTCGGGCAGCTGAGGCAGGAGAATGGTGTGAACCCGGGAGGCCGA  
 GCTTGCAGTGAGCCGAGATCGCAACATTGCACTCCGGCTTGGGGGACGGAGCGAGACTGTCTCAAAAAA  
 AAAAAAAGTCTCCTGTAAGAGGTGAGAGCCTGGGTTCAAACCTCAGGTTCTCTGCCTCCAAATCACACAC  
 TCTTAGCAACCACTCTCTATTGTTGATCTCTCCCTATGGGTGGAAGCCCTAGGGAACAGGTGGTGGGGAA  
 AGGAGGTAAGGGCAGGGCCAGAGTCAGGAGTAGGTGTGAGAGCCCTAGGGTGGGGTGGAGAGGTACCA  
 GGGCTCTTACAGCAGCTGTGGCCTGGATCAGCGGTGTGGCATTATCTTGGCCCCCATTGACCCAGTTGAC  
 ATCAGCTCCATGGGCAAGGGCATCAGCCATGGTGGGAAGAGATGGAGGATGCCAGACGCTCGAAACAGT  
 AGGGCCCCAGGGTGCAGGCTTCCAGGCTCTCAGAGGGGGCTCTGTTCCGGGGATTGGTTCTGTTAGG  
 GGAAGCAGCTCCGAGTCTGGGAAGAAAACCTCAGCAGTGTCCCAATGCTATAATGGGACAGGTCTCTT  
 CTAAATGATGGGAGCTTGGGACTGTGGAGGGAATAGAGTGATGCAAGTGTGGGTATGTGTAAGTATGCG  
 TATGCATGTGTACGAGTCCCTAGGGTGTGGGGGAGAGACGGCATCATACCTCATCTGGTCCAACCACAC  
 TTGGCCTCAGCTCTCAACCCCTGACGCTCCAGCCAAACCCCTCTCTCTCTCTCTCTCTCTCTCTCTCT  
 TTGGCACCCCTTACCCTCCCTGCCACGCCCAGCCCCACATTCTCTCTCTCTCTCTCTCTCTCTCTCTCT  
 CGTAACCCCTGAAACGGCAGTCCGGTCCCTCCGACATTGTCCAGCGGAAGGCCTGGGCTTCACACTCTGT  
 GCCTCCCGGCGCTACCTGGCAGATGCCGAGCACACAGCAGATGCTCAATGAATGCCCGACCAACCCCTAT  
 ACCTGGCTTGGATCTCAAGCTCCCTGGCCGGGGCTGATGGAAGGCTTTGGGGGCACAGGAGGCTGCCCC  
 CTTGGGCGCCCCCGCCACCTCTTCGCCCTCGAATCTCAGGCAGCTTGGTCAGGAACCTCTCTCCACGT  
 ATTTAGCGTGAATCCAGGCTCCTTCT  
 CTCCAGGGGTCCCCATTCCCCTGGGAGGCTAAACCCCAAGCTCACCGGGAGCAGCTGGGCCCCGTGTTTC  
 TTCCTGCCATGGCCTCCACGCGGGCTCATAGATCTGGTTGATGATGACATTTCCAGCTCACACATGA  
 GCTTCAGGAGGCCAGGCAGAGGCAGAGACAGGGAAGGTGGGGGTGAGTGACTCCTCAGGGATCACGCCC  
 CTGACCCGCCATGTCTTGGCCACCCCAAGTTCTTGGCCCAATCTTCAACATACGCTAAGTTACCTTC  
 ACTAGTTCTGGCTCCCATGAGTCAAGGGTCAGAGACCGGACTTTGGAGAAGTGAACACCAAGGCTCCTGG  
 AGGGCCAGAGGGGGAGGGTCAGGCCCTGTGAGGGGGGCACTGGCCTGGGGAGCTGCTGCTGCTCTGAA  
 GACACTGGGAGGCAAGGCTGGCATGGGGGCCGTCAGAGGTGCTGGCCAGGAGGCAGGGCAGCTGCGG

Figure 36 part - 20

CCATGTAACCGCCATGTAGCCTTGACCTGGCCCTGGCAGGACTCTGCCTCGTCACCATTCCTTCTTCTT  
 AGGTTTCATTTCAAGGCCCTCATCTCCAGCCACCTCCCTTCTCTAGTGACACTTGTGACACTTTGGCC  
 TGGACAACCTCTCCCATGTCACTCCCTTCCACCACACTGAGGTGGGGGGCGAGGGCCTTAGATACTTGC  
 TAAGGCCTCATGACCGTTTCTCTGCCTAGTCTTCACTGGCTCCCCACCCTCAGCAGCCTTGACCCACA  
 CTTCTTCCAACCAAGCCAACAAATTCTGGGTATCCCCCAATTCTGGCCAGACTAGGACACAGAGGGGCTA  
 GGCCCGCTGGGTCCAACCTGGCACCCCAAGAGCTTGGGCCAGGCCTGGTACCCAGTGACAAAGCCAGAA  
 GCTAAGAGAGGAAGCCAGGACAGGGAAGGAAGAGGGGCCGGTGTGATGCGCTCTGTATTGGAGCCGCACT  
 GTGGCCCAAGGAGTGGGGCTCCCGCATGGGCCCTGTGGAGTAACCTGTGGATGCCGGAACACTGTAATGC  
 AGAGGGTGACACCAAGGTTGATGCTGGCCCACTCCGGGGCTGGCTCCCGGCAGTGCAGCACTGGGCATT  
 GCCATCCACACTCTGGACCTGGGCCACCACGTGCCCCAGCTCCCCAGGCTCCCTTCCCCTGGCCATTCCA  
 CCAGAGCCCAGGGTGGCAGCAGAGCCTATGGCCAGGTGTCTTGAGCCCTGGGGGAGAGAGGGGAAGAAAG  
 GGTGGCCAGGGGCTAGGGTAAAGGGTGCCCCATCTCCACAGGCAGCCTGGCTCCGCACCCCAAGTTA  
 AGGTACCTGGCCTGGACCCCGGGGCTGTCTCAAGGCAGCCCTGACTGAAGGCAGAAGCAATGCTGCTC  
 TGCACAGCACTGACCCACAGCTGCAGGAGGCGCTCTGAGTCAGCCTGGAGGAGGCAGGACCTAGGTAGGA  
 GGGTGAGGGAGATGGCAGAGGGGTCTGAGGCTGGGAAGCAAAGTGGCAGCATGGGCAGACTGACATTCA  
 GCCAGTATTCAACCAAGTTCCAGTTGCATTGAAAGACTTCTGTACCAGTTGGTAATATTCTCTAAATATC  
 CCCATCACCCCTGTACCCTTCCACAATGGCCCCCAGTCCAGCCGCCAAAGAATTAAATTAAAGTCTG  
 GAGCTGCATGGGGGGCTTCCATTGTGGTGGGCCCTGCCCTTTCAGATTGGCAGTTGTTTTAGATATATTAGA  
 GTATCACCCCTGGGGATTGCACTCACTTGTCTGGTGGACACCACCTCAAAGCAGAACCAGCTTTCTGAGTC  
 AGGGCAGAGTTTCACTGTGCAGAGACGAAGGTCTACCACCACAGTCACAGGGTCTGGCAGGATAAG  
 GTGATAAGGGGGCCAGATGTCCAGCTGCAGGCAAGAGCTGAGTCTCCCTGGGGGCCAGGCATCCAGGACCC  
 AGGTCCACTCACCTTGACTTCTTCTGGTAAACCAAGTTGGTTGCTCTGAATGGTGAACCAGCGTCTGTAA  
 GAGAAGGAAATCATTACAGACATAGGCAGCTTTAGGATGAGGGACGGAAGAGAGGGCTGTGCTTTTGCCC  
 ATGAGGATCTTACTGAGAGGACAGACACCTGGGCTGACTGTTCACGAGACATTCCAGAGAAGGGTGGAC  
 AATTGTGCAGATTGGACATCTAAAGGATGCTATTCTTCTTGGACAACCCAGATTTCAATATAGTTATG  
 AAGACAATTTCCAGCAGATGGCAGTAAATTTCTTTTCTAATAAAATGTCTATTGCTACAATTTAAAAA  
 ATACTATTTAGGCTGGGCTCACACCTGTAATCCCAGCACTTTGGGAGGCTGATGGGGGTGGTGGATCGCC  
 CGAGGTGAGGAGTTTGAGACCACCTGACCAATATGGTGAAACTCCGTCTCTACTAAAAATACAAAAAAT  
 AGCCAGGCGTGGTGGCAGGCGGCTATAATCCCACCTACTTGGGAGGCTGAGGCGGGAGAATCGCTTGAAC  
 CCAGGAAGCTGAGGTTGCAGTGAGCTGGGATCGCACCACCTGTGCTGCAGCCTGCGCAACATAGCGAGGCT  
 CCATCAAAAAAGAAAAAAGAAAAAGAAAAAGAAAAAGAAAGAAATCTTGGGGGCCAGGTACAGTGG  
 CTACGCTGTAGTCCCAGCAAGTTGGGAGGCGGAGGCGGGTGGATTGCTTGATGTGAGGAGTTTGAAC  
 CAGCCTGGGCAACATGGTGAAACCCTGTTTCTACCAAAATACAAAAATTAGCCGAGCGTGATGGCAGC  
 GCCTGTGGTCCCAGCTGTTTAGGATGCTGAGGAGGGAGGATCACTTGAACCTCAGGGGATAGAGGTTGCAG  
 TGAGCCGAGACTGCGCCACTGCACTGCAGGCTGGGCAACAGAGTGACACCCCATCTCAAAAAAACAG

Human CENTB1 mRNA sequence - var4 (public gi: 32879918) (SEQ ID NO: 40)  
 ATGACGGTCAAGCTGGATTTGAGGAGTGTCTCAAGGACTCACCCCGTTTCCGAGCCTCTATTGAGCTGG  
 TGGAAAGCCGAAGTGTGAGAATTGGAGACCCGTCTGAAAGCTCCTGAACTGGGCACTGGTCTCCTGGA  
 AAGTGGGCGCCATTACCTTGCTGCCAGCGCGCCTTCCGTTGTGCGGCATTTGTGACCTGGCCCGCTGGGT  
 CCACCAGAGCCCATGATGGCGGAGTGTCTGGAATAATCACCGTGAGCCTGAACCACAAGCTGGACAGCC  
 ATGCGGAGCTTCTAGATGCCACCAACACACACTGCAGCAGCAGATCCAGACCTGGTCAAGGAAGGTCT  
 GCGGGGTTTCCGAGAGGCTCGCCGGGATTCTGGCGGGGGGCTGAGAGCCTGGAGGCTGCCCTGACCCAC  
 AACGCAGAGGTTCCAGGCGCCGGGCCAGGAGCAGAAGAGGCAGGAGCTGCTTTGAGGACGGCTCGAG  
 CTGGGTACCGGGGACGGGCACTGGATTATGCCCTGCAGATCAACGTGATTGAGGACAAGAGGAAGTTTGA  
 CATCATGGAGTTTGTGCTGCGTTTGGTGGAGGCCAGGCTACCCATTTCCAGCAGGGCCATGAGGAGCTG  
 AGCCGGCTGTCCAGTATCGAAAGGAGCTGGGCGCCAGTTGCACCAGCTGGTCTTGAATTGACGACGAG  
 AGAAGAGGGACATGGAGCAGAGACAGTGTCTGTAACAGAGGAGCTGGTGGGGAGGAGCCAGAACC  
 AAGCTTAAGAGAGGGGCTGGTGGCTGGTGGATGGAAGGACATCTCTTCAAACGGGCCAGCAACGCATTT  
 AAGACCTGGAGCAGACGCTGGTTACCATTCAGAGCAACCAACTGGTTTACCAGAAGAAGTACAAGGACC  
 CTGTGACTGTGGTGGTGGATGACCTTCGTCTCTGCACAGTGAAACTCTGCCCTGACTCAGAAAGGCGGTT  
 CTGCTTTGAGGTGGTGTCCACCAGCAAGTCTGCTCCTCCAGGCTGACTCAGAGCGCCTCCTGCAGCTG  
 TGGGTCACTGCTGTGCAGAGCAGCATTGCTTCTGCCTTCAGTCAGGCTCGCCTTGATGACAGCCCCCGG  
 GTCCAGGCCAGGGCTCAGGACACCTGGCCATAGGCTCTGCTGCCACCTGGGCTCTGGTGGAAATGGCCAG  
 GGAAGGGAGCCTGGGGGAGTGGGGCAGTGGTGGGCCAGGTCCAGAGTGTGGATGGCAATGCCAGTGC  
 TGCAGTGCCTGGGAGCCAGCCCCGAGTGGGCCAGCATCAACCTTGGTGTACCCCTCTGCATTCACTGTT  
 CCGGCATCCACAGGAGCCTTGGTGTTCATTTCTCAAAGTCCGGTCTCTGACCCCTGACTCATGGGAGCC  
 AGAAGTAGTGAAGCTCATGTGTGAGCTGGGAATGTCTCATCAACAGATCTATGAGGCCCGCTGGAG  
 GCCATGGCAGTGAAGAAACAGGGCCAGCTGCTCCCGCAGGAGAAGGAGGCTGGATTACGCTAAAT  
 ACGTGGAGAAGAAGTGGTGAACCTGCTGAGGCTGAGGGCGAAGAGGTGGCCGGGGGCGCCCAAG  
 GGGGCAGCCTCCTGTGCCCCCAAGCCTTCCATCAGGCCCCCGCCAGGGAGCTTGAGATCCAAGCAGAG  
 CCCCCCTCTGAGGACCTGGGAAGCCTGCACCTGGGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCAT  
 CTCTTCCACCATGGCTGATGCCCTTGGCCATGGAGCTGATGTCAACTGGGTCAATGGGGCCAAGATAA

Figure 36 part - 21

TGCCACACCGCTGATCCAGGCCACAGCTGCTAATTCTTCTTGGCCTGTGAGTTTCTCCTCCAGAACGGG  
GCGAACGTGAACCAAGCGGACAGTGCAGGGCCGGGGCCCGCTGCACCACGCAACCATTTCTGGCCACACGG  
GGCTCGCCTGCCTGTTCTGAAACGGGGAGCTGATCTGGGGGCTCGAGACTCTGAAGGCAGGGACCCTCT  
GACCATCGCCATGGAACAGCCAACGCTGACATCGTCACCTGCTACGACTGGCAAAGATGAGGGAGGCT  
GAAGCGGGCCAGGGGAGGAGGAGATGAGACGTATCTTGACATCTTCCGCGACTTCTCCCTCATGGCGT  
CAGACGACCCGAGAAGCTGAGCCGTGCGAGTCATGACCTCCACACGCTGTAG

Human CENTB1 protein sequence - var1 (public gi: 32879919) (SEQ ID NO: 231)  
MTVKLDFEELKDSRFRASIELVEAEVSELETRLEKLLKLGTGLLESGRHYLAASRAFFVVGICDLARLG  
PPEPMAECLKFTVSLNHKLDSHAELLDATQHTLQQQIQTLVKEGLRGFREARRDFWRGAESLEAALTH  
NAEVPRRRAQEAEEAGALRTARAGYRGRALDYALQINVIEDKRFDIMFVLRRLVEAQATHFQQGHEEL  
SRLSQYRKELGAQLHLVLNSAREKRDMEQRHVLLKQKELGGEEPEPSLREGPGGLVMEGHLFKRASNAF  
KTWSRRWFTIQSNQLVYQKYKDPVTVVVDDLRCLTVKLCPSERRFCFEVVSTSKSCLLQADSERLLQL  
WWSAVQSSIASAFSQRLLDDSPRGPQGSGHLAIGSAATLGGSGMARGREPFGVGHVVAQVQSVQDGAQC  
CDCREPAPEWASINLGVTLICQCSGIHRS LGVHFSKVRSLTDSWEPELVKLMCELGNVIINQIYEARVE  
AMAVKKPGPSCSRQKEAWIHAKYVEKKFLTKLPEIRGRRGGRRPRGPPVPPKPSIRPRGSLRSKPE  
PPSEDLGSLHPGALLFRASGHPPSLPTMADALAHGADVNVVNGGQDNATPLIQATAANSLLACEFLLQNG  
ANVNQADSAGRGLPHHATILGHTGLACLFLKRGADLGARDSEGRDPLTIAMETANADIVTLRLAKMREA  
EAAQQAGDETYLDIFRDFSLMASDDPEKLSRRSHDLHTL

Human CENTB1 protein sequence - var2 (public gi: 34533015) (SEQ ID NO: 232)  
MSALAVSMAMVRGSLPSESRAPRSAFRNRQASLERRARVSRPPNFSQPSPPCHHPYPVWPRMVAWCSG  
PRPALSAWFTFAPFWRRNSQARREFCMEKSRRGVGEGIPSGGFQDVLGWRQFREWEGGVW

Human CENTB1 pray sequence - var1 (SEQ ID NO: 41)  
GCCTGGAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCCAAG  
CAGTGGTATCAACGCAGAGTGGCCATTATGGCCGGGGAAGGAGGCTGGATTACGCTAAATACGTGGAG  
AAGAAGTTCCTGACCAAGCTGCCTGAGATTCGAGGGCGAAGAGGTGGCCGGGGGCGCCCAAGGGGGCAGC  
CTCCTGTGCCCCCAAGCCTTCCATCAGGCCCGGCCAGGGAGCTTGAGATCCAAGCCAGAGCCCCCTC  
TGAGGACCTGGGAAGCCTGCACCCTGGGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCATCTCTTCCC  
ACCATGTGCGCCGCCTCGGCCCTTAGAGGGTGGGCATCGATACGGGATCCATCGAGCTCGAGCTGCAGAT  
GAATCGTAGATACTGAAAAACCCCGCAAGTTCACCTCAACTGTGCATTCTGTGC

Human CENTB1 pray sequence - var2 (SEQ ID NO: 42)  
CCGGCATGAGTACCATAACGACGTACAGATTACAGCTNCATATAGTGACCATGGAGGCAGTGAATTCCA  
CCGCAAGCAGTGGTATCAACGTATGAGATGGACCATATGAGCCGGGGTGGGCAGCCTCCTGATGTCCC  
CGCGAAAGGCCTTCCATCAGGCNCCGGCAGAGGCAGCTTGAGATCCAAGCCAAGAGCCCCCTCTGAGGA  
CCTGGGTAAAGACCTGCTACCACTAGTGCAGCCCTACTGTTNCGAGCGTCTGGGCATACTCCATCTCTTCC  
CAACCGATGGNCTGATGCCCTTTGGCGCCATGGTAGCTTGATGTCAACCTAGGTGTACAANTGTGAGTGG  
CCTNAAGGATAAATTGCTCGTACGACAGACCGGCTATCAAAGGCACAATAATCTAGCTAATTCTGTTACG  
TTCTTGG

Human CENTB1 pray sequence - var3 (SEQ ID NO: 43)  
CCTGGAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCCAAGC  
AGTGGTATCAACGCAGAGTGGCCATTATGGCCGGGGGGGAGCCTCCTGTGCCCCCAAGCCTTCCATCA  
GGCCCCGGCCAGGGAGCTTGAGATCCAAGCCAGAGCCCCCTCTGAGGACCTGGGAAGCCTGCACCCTGG  
GGCCCTACTGTTTCGAGCGTCTGGGCATCCTCATCTCTTCCACCATGGCTGATGCCCTTGCCCATGGA  
GCTGATGTCAACTGGGTCAATGGGGGCCAAGATAATGCCACACCGCCGATCCAGGCCACAGCTGCTAATT  
CTCTTCTGGCCTGTGAGTTTNNGCTCCAGAACGGGGCGAACGTGAACCAAGCGGACAGTGCAGGGCCGGGG  
CCCCGCTGCACCACGCAACCATTTTGGCCACAGGGGCTCGCCTGCCTGTTCTTGAACGGGGAGCGGAT  
CTGGGGGCTCGAGACTCTGAAGGCAGGGACCCTCTGACCATCGCCATGGAACAGCCAACGCTGACATCG  
TCACCCCTGCTACGACTGGCAAAGATGAGGGAGGCTGAAGCGGCCAGGGGCAGGCAGGAGATGAGACGTA  
TCTTGACATCTTCCGCGACTTCTCCCTCATGGCGTCAGACNACCCNGAGAAGCTGANCCGTGCGAGTCAT  
GACCTCCACACGCTGTGACCCGAGGCCACGGGGCCCGCCTGCCTTCNTTTCCCGNACCGGGCCCTT  
TGNCATNAAAGCTNCGNGCTTCNAAAAAAAAAAAAAAAAAAAA

Human CENTB1 pray sequence - var4 (SEQ ID NO: 44)  
CCGGCCATGGAGTACCATAACGACGTACAGTATTACAGCTACATATGGCCATGGAGGCCAGTGAATTCCAC  
CGCAATGCAGTGGTATCAACGCATGAGATGGACCATATGGCCGGGGTGGGCAGTCCGTCCATGATGT  
CCCCCAAGGCCTTCCATCAGGCCCGTGGCAGAGGAGGCTTGAGATCCAAGCCAGAGCCACCCTCTGA  
GGACCTGGGAAGCCTGCACCCNGGCGGCCCTACTGTTTCGAGCGTCTGGGACATACTCCATCATCTTCCC



ACGCGATGGACTGATGCCCTTGGGCCAATGGACGCTGATGTCAACTGGTGTACAGAGTGTGAGTGGCCAA  
GATTAAGTCTCATCACCCGATGATCCATGGCCACTAGTCTGCTAAATATCTCTTCTGGCCTGTGAGTTT  
CTCCTCACAGAAACGGTGCCTGCAATCGTGAACNCAAAGCGGATCGAGTTGCAGGGCCTGGGGCCGNG  
TTGCACCGATCGCAAGCCAATTCTTGGCCANCTATCTGCGGGCTCGCCTGCCTGTTCTTGANACGAGGA  
GCTGATCTGGGGCGCTCGACGACTCTGAAG

Human CENTB1 pray sequence - var5 (SEQ ID NO: 45)

GCCATGGATACCATACGACGTACAGATTACGCTCATATGGCCATGGAGGCAGTGAATTCCACCCAAGCAG  
TGGTATCAACGCATGAGATGGTCATTATGGCCGGGGCAGGAGAAGGAGGCCTGGATTACGCTAAATACG  
TGGAGAAGAAGTTCCGTGACCAAGCTGCCGTGAGAATTTCGAGGGCGAAGAGGTGGCCGNGGGCGCCCAAGG  
GGGCAGCCTCCTGTGCCAGCCCTAAAGCCTTCCATCATGGCCCCGCGTCCAAGGAGCTTGAGATCCAATG  
CCGAGTAGCCCCCTCTGACGGACCTAGGGAAGCCTGCTACCCTGAGGTGCCCTACGTGTTTCGAGCGTC  
TGGGCATCCTCCATCTCTTTCCACCATGGCCTGATGCCCTTGCCCATGGAGCTGATGTCAACTGGGTCAA  
TGGGTGGCCAAGATATATGCCACACCGCTGATCCAGTGCCACAGCTGCTACTTCTCTTCTGGCCTGTTGA  
NTNTTCTCCTCCAGAAGGTGGCGACACGTGAACCAAGCGGNCAGTGCCGGC

Human CENTB1 pray sequence - var6 (SEQ ID NO: 46)

GGCCATGGAGTACCATACGACGTACAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCGCAA  
GCAGTGGTATCAACGCATGAGATGGACCATTATGGGGGGCAGTGCCATGGGCAGCTGAAGAAATCCANGC  
CCAGCTGCTCCCGGCAGGAGAAGGAGGCCTGGATTACGGGCATAATAGTAGCAGCTGGAGTAAGAAGTTC  
CTGTATCCAAGTCTGCCCTGACGAATTCGAGGTGGCGAAGTATGGTGGCCGGGGGCAGTCTCTGAAGGAG  
GGTACGCCACTCCTGGTGCCGCCACGAACATGCCCTTCCATACACGCGTCCCGGCCACCGGGATGGC  
ATTGAGATCCACATGCACAGAGCCCCGCTCTGAGGACCTGTGAGCAAGCTCATGGCAACCTGGGGACC  
CTAGCGTAGTATTCTGAGCCAGTCTGGGCAATCGCTTACATCTCTTCTCCACGCATGAGCATGATGCCG  
GCTTTGACCCATGGAGCTAGATGTCAACTGGGTCAATGGGGTGCCAAGATAATCGCCACACCGTCTGATC  
CAAGGCCTACAGCTGCTAAGCTTCTCTTCTGGCCTGTGAGTTTCTCTCTCAGAACGGGGCGAAGTGTG  
AAGCCCAAGCGTGACAGTGCGGGCCCGGGCGGCGGCGGCAATCCACTTCTTGGCCNGCAACNT  
GGGCTCGNCTTGCCCTTGTTTCTTGATCAC

Human CENTB1 pray sequence - var7 (SEQ ID NO: 47)

CNCGCATGGAGTACCATACGACGTACAGATTACGCTCATATGGCCATGGAGGCAGTGAATTCCACCCAA  
GCAGTGGTATCAACGCATGAGTGGACCATTATGGGGGAAGCTCATGTGTGAGCATGGGAAATAGTCAATCA  
TCAACCAAGATCTATGAGGCCCGCGTGGAGGCCATGGCAGTGAAGAAACCAGGGCCAGTCTGCTCCCGG  
CAGGAGAAGGAGGCCTGGATTACGCTAAATACGTGGAAGAAGAAGTTCTTGACCAAGCTGCCTGAGATT  
CGATGGCGANGAGGTGGCCGGGGCGCCCAANGGGGCAGNCTCCTGTGCCCCCAAAGCCTTCCATCAGGC  
CCCAGGCGCAGGGAGCTTGAGATCCAATGCCAGAGCCCCCGTCTGAGGACCTGGGAAGCCTGCACCCTG  
GGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCATCTCTTCCACCATGGCTGATGCCCTTGCCCATGG  
AGCTGATGTCAACTGGGTCAATGNGCGGCCAAGATAATGCCATCACCAGTGTATCCAGGCCACAGCCTG  
CTAANTTCTACTTCTGGCCGTGTGAGTTTCTCCTCCAGGAACGGGGCGAACCCTGGACCAAGGCGGACNN  
GTGCGGGCCGGGGCCGCTGCCACCACGCCAACCATTTCTTGGCATAACGGGCTCGCCT

Unigene Name: DDEF1 Unigene ID: Hs.386779

Human DDEF1 mRNA sequence - var1 (public gi: 31873727) (SEQ ID NO: 48)

GAGACAAAGTTTACAAAAATTGAGAAAGAGAAAAGAGACGACGCAAAACAACATGGGATGATCCGCACAG  
AGATAACAGGAGCTGAGATTGCGGAAGAAATGGAGAAGGAAAGGCGCCTCTTTCAGCTCCAAATGTGTGA  
ATATCTCATTAAAGTTAATGAAATCAAGACCAAAAAGGGTGTGGATCTGCTGCAGAATCTTATAAAGTAT  
TACCATGCACAGTGCAATTTCTTTCAAGATGGCTTGAAAACAGCTGATAAGTTGAAACAGTACATTGAAA  
AACTGGCTGCTGATTTATATAATATAAAAACAGACCCAGGATGAAGAAAAGAAACAGCTAACTGCACTCCG  
AGACTTAATAAAATCCTCTCTTCAACTGGATCAGAAAGAAGATTCTCAGAGCCGGCAGGGAGGATACAGC  
ATGCATCAGCTCCAGGGCAATAAGGAATATGGCAGTGAAAAGAAGGGGTACCTGCTAAAGAAAAGTGACG  
GGATCCGGAAAGTATGGCAGAGGAGGAAGTGTTCAGTCAAGAATGGGATTCTGACCATCTCACATGCCAC  
ATCTAACAGGCAACACGCCAAGTTGAACCTTCTACCTGCCAAGTAAACCTAATGCCGAAGACAAAAAA  
TCTTTTGACCTGATATCACATAATAGAACATATCACTTTAGGCAGAAAGATGAGCAGGATTATGTAGCAT  
GGATATCAGTATTGACAAATAGCAAAGAAGAGGCCCTAACCATGGCCTTCCGTGGAGAGCAGAGTGGGG  
AGAGAACAGCCTGGAAGACCTGACAAAAGCCATTATTGAGGATGTCCAGCGGCTCCAGGGAATGACATT  
TGCTGCGATTGTGGCTCATCAGAACCCACCTGGCTTTCAACCAACTTGGGTATTTTGACCTGTATAGAAT  
GTTCTGGCATCCATAGGGAAATGGGGTTTCATATCTCTCGCATTGAGTCTTTGGAAGTAGACAAATTAGG  
AACTTCTGAAGTCTTGTGGCCAAGAATGTAGGAAACAATAGTTTAAATGATATTATGGAAGCAAAATTA  
CCCAGCCCCCTACCAAAAACCCACCCCTTCAAGTGATATGACTGTACGAAAAGAATATATCACTGCAAAGT  
ATGTAGATCATAGGTTTTCAAGGAAGACCTGTTCAACTTCATCAGCTAAACTAAATGAATTGCTTGAGGC

Figure 36 part - 23



CATCAAATCCAGGGATTACTTGCCTAATTCAAGTCTATGCAGAAGGGGTAGAGCTAATGGAGCCACTG  
CTGGAACTGGGAGGAGCTTGGGGAGACAGCCCTTCACTTGGCGTCCGAAGTGCAGATCAGACATCTC  
TCCATTGGTTGACTTCCCTGTACAAAACCTGTGGGAACCTGGATAAGCAGACGGCCCTGGGAAACACAGT  
TCTACACTACTGTAGTATGTACAGTAAACCTGAGTGTGTTGAAGCTTTTGCTCAGGAGCAAGCCCACTGTG  
GATATAGTTAACCAGGCTGGAGAACTGCCCTAGACATAGCAAAGAGACTAAAAGCTACCCAGTGTGAAG  
ATCTGCTTTCCAGGCTAAATCTGGAAAGTTCAATCCACACGTCCACGTAGAATATGAGTGAATCTTCG  
ACAGGAGGAGATAGATGAGAGCGATGATGATCTGGATGACAAACCAAGCCCTATCAAGAAAGAGCGCTCA  
CCCAGACCTCAGAGCTTCTGCCACTCCTCCAGCATCTCCCCCAGGACAAGCTGGCACTGCCAGGATTC  
GCACTCCAAGGGACAAACAGCGGCTCTCCTATGGAGCCTTACCAACCAGATCTTCGTTTCCACAAGCAC  
AGACTCGCCACATCACCAACCAGGAGGCTCCCCCTCTGCCTCCTAGGAACGCCGGGAAAGGTCCA  
GGCCACCTTCAACACTCCCTCTAAGCACCCAGACCTCTAGTGGCAGTCCACCTATCCAAGAAGAGGC  
CTCTCCCCCACCACCCGGACACAAGAGAACCCTATCCGACCTTCCAGCCCACTACCTCATGGGCCCCC  
AAACAAAGGCGCAGTTCTTGGGGTAACGATGGGGGTCCATCTCTTCAAGTAAGACTACAAAACAGTTT  
GAGGACTATCCAGCAGTGCAGCACCAAGTTCTGCAAAAGACTGCCCTTGGCCCAAGAGTTCTTCTTAAAC  
TACCTCAGAAAGTGGCACTAAGGAAACAGATCATCTCTCCTAGACAAAGCCACCATCCCGCCCGAAAT  
CTTTAGAAATCATCAGTTGGCAGAGTTGCCACAAAAGCCACCCTGGAGACCTGCCCCAAAGCCC  
ACAGAACTGGCCCCCAAGCCCCAAATTTGGAGATTTGCCGCCTAAGCCAGGAGAAGTGGCCCCAAACCAC  
AGCTGGGGGACCTGCCACCCAAACCCCAACTCTCAGACTTGCCCTCCCAAAACCAGATGAAGGACCTGCC  
CCCCAAACCACAGCTGGGAGACCTGCTAGCAAAATCCAGACTGGAGATGTCTACCCCAAGGCTCAGCAA  
CCCTCTGAGGTCACTGAAGTCAACCCATTGGATCTATCCCCAAATGTGCAGTCCAGAGACGCCATCC  
AAAAGCAAGCATCTGAAGACTCCAACGACCTCAGCCTACTCTGCCAGAGACGCCCGTACCACTGCCAG  
AAAAATCAATACGGGAAAAAATAAAGTGAGGCGAGTGAAAGACCATTATGACTGCCAGGCAGACAACGAT  
GACGAGCTCACATTCATCGAGGGAGAAGTGATTATCGTCACAGGGGAAGAGGACCAGGAGTGGTGGATTG  
GCCACATCGAAGGACAGCCTGAAAGGAAGGGGCTTTTCCAGTGTCTTTGTTTCATATCTGTGACTA  
GCAAAACGCAGAACCTTAAGATTGTCCACATCCTTATGCAAGACTGCTGCCTTCATGTAACCTGGGCA  
CAGTGTGTATATAGTGTCTGTACAGAGTAAGAACTCATGGAAGGGCCACCTCAGGAGGGGGATATAAT  
GTGTGTTGTAATATCTGTGGTTTTCTGCCTTACCAGTATGAGGGTAGCCTCGGACCCGGCGCGCCTT  
ACTGGTTTGCCAAAGCCATCCTTGGCATCTAGCACTTACATCTCTATGCTGTTCTACAAGCAACAAA  
CAAAAATAGGATATAGGAAGTCTGGCTTGGCAATAGAAAGTGGTCTCCAGCAACCGTTGAAAGGCATA  
GAATTGACTCTGTTCTTAAACATGCAGTATTTCTCAATTGTGTTACTGAAAATGCAACATTAGCAAGAGG  
TGGGTTCTGTTTTCCAGGTGAAACTTTTAGCTCCATGACAGACCAGCCTGTAGTTATCTGTGTACACAGT  
TTACAGCTACAAAACCTACTTTGGTATTTATTACAGAAAAGTGCTCAGTTAAATGTAAGTGTATTCTCT  
TCAGCAAAATATCTAGTACCCAAAACCTTTTATGGCATTTTACAATGCACACAGCCTCATGCAAGTTTA  
GACAAGTGGATTTTACTGTCTTATGAGTGCCCGCCCTGATATATTACCTCATTATGCAAAAATAACAT  
ATCTTTTATGACTATTTTGACAAAAGTTTAAACACATATGAAGTTCAAATTTTCAAGAACCAAGGATGC  
CAGAAAATATTAGCCTCTACATTACGCATGCATTTAGAACTTACCTGAAATCTGCCTTTTATAAAGGAA  
TAGTATGGATAAGTGAATTTGTACATTTTAAACTTGATTGCCATTAAAGCAGAAATTATAAGGTTGCA  
ACAATATTTGTTTCTAATCACTGGCTTTCTCAAGAGTATGGATTGACATATTGTGTATGAATGCATATC  
TCTCAGATGTTGTTGAAGCATCCATTGCTATTTTATTATTTTCTTAGTTTGTCTTGGACAAAT  
TAACTTTTAAAGATTATTCAAGATGAATTTAAAGTCAACCCCTTCAACACAGTTTCCCTACTGTATGTA  
GAATCCAGGTGCTGAAACCAAGTGTCTTTTCCCATGCTCTTTGTTAAACCCCAATTATAGATAATTTT  
TCCAGTCTTAAGCTCTGTCCACCTTCAAGTCAATTATAACCAAGTTTGAACGCTGCTATGAATTGCA  
CTGTGAAAAGCACTCTTCCCTCTCAGTTTCTTTTATCCAGCCATGTTTATCAGATCCTTAAGAACAT  
TGTATTTAGTCTTTTATCATCAGTCTGAATTTTGGAAAAGAAATGCAATAGTTGTACTCCACAGTCAGTGG  
AACTGTTCCCTGAGTCCGAGGCTCATGTCTCATTCTGGCACTACATTTGCTTAAATTGCTATTTTGGCAA  
CAGCACAGAAAACATAATTTTTAAGCAGAGAATCTTGGCAATGAGTGAGAGATGTTAATTTACAGAAAG  
CACAACCTCCCAACCAACCCCTTAGGAAAAGCCCTCTTCCATCGTTACAGTGCTCAGTGAATATTAATTTA  
GTTCTGCTTAAGTGGTTGCTATACAACTTTGAATAGCCACCTAATAAATAAACCTTGCATGACAAACCT  
GCAAAATATTTATCAGCTGTTATTGAAAGTGATTTTAAAGCAATTGCTTCTCAGTGTGAGGACATG  
TGAATTTCCACACCAACAGAGCATGAGGAACCAAGTTGACATGCTGGGTTGTGACTGGCAGCTTTAGCAG  
CCTCGGTACTGAAGCCACACCAAGTGTCCGGATGGAAGTCTGCATCTGAGGTTGCTCAGTGTCCCGGTCAT  
TCATTTACACATTTTAACTTGCAATTAAGAGCTGTTCTTTCTGTGGCCTAGACTCTTTTCACTGATCTC  
AAAAATAACTGGTTTTTTTTCAAAAAAAAAAAAAAAAAAAAAA

Human DDEF1 mRNA sequence - var2 (public gi: 6330853) (SEQ ID NO: 49)  
GAAAAGAGAGCACGCAAAACAACATGGGATGATCCGCACAGAGATAACAGGAGCTGAGATTGCGGAAGAA  
ATGGAGAAGGAAAGGCGCCTCTTTCAGCTCCAAATGTGTGAATATCTCATTAAAGTTAATGAAATCAAGA  
CCAAAAGGGTGTGGATCTGCTGCAGAACTTATAAAGTATTACCATGCACAGTGAATTTCTTTCAAGA  
TGGCTTGAAAACAGCTGATAAGTTGAAACAGTACATTGAAAACTGGCTGCTGATTTATATAATATAAAA  
CAGACCCAGGATGAAGAAAAGAACAGCTAACTGCACTCCGAGACTTAATAAAATCCTCTCTTCAACTGG  
ATCAGAAAGAACTTAGGAGAGATTCTCAGAGCCGGCAAGGAGGATACAGCATGCATCAGCTCCAGGGCAA  
TAAGGAATATGGCAGTGAAAGAGGGGTACCTGCTAAAGAAAAGTGACGGGATCCGGAAGATGGCAG  
AGGAGGAAGTTCAGTCAAGAAATGGGATTCTAACCATCTCACATGCCACATCTAACAGGCAACCAGCCA

Figure 36 part - 24

AGTTGAACCTTCTCACCTGCCAAGTAAAACCTAATGCCGAAGACAAAAAATCTTTTGACCTGATATCACA  
TAATAGAACATATCACTTTTCAGGCAGAAGATGAGCAGGATTATGTAGCATGGATATCAGTATTGACAAAT  
AGCAAAGAAGAGGCCCTAACCATGGCCTTCCGTGGAGAGCAGAGTGCAGGAGAGAACAGCCTGGGAAGACC  
TGACAAAAGCCATTATTGAGGATGTCCAGCGCTCCAGGGAATGACATTTGCTGCGATTGTGGCTCATC  
AGAACCCACCTGGCTTTCAACCAACTTGGGTATTTTGACCTGTATAGAATGTTCTGGCATCCATAGGGAA  
ATGGGGGTTTCATATTTCTCGCATTCAGTCTTTGGAAGTACAGACAAATTAGGAACCTCTGAACCTCTGCTGG  
CCAAGAATGTAGGAAACAATAGTTTAAATGATATTATGGAAGCAAATTTACCCAGCCCCCTACCCAAACC  
CACCCCTTCAAGTGATATGACTGTACGAAAAGAATATATCACTGCAAAGTATGTAGATCATAGGTTTTC  
AGGAAGACCTGTTCAACTTTCATCAGCTAAACTAAATGAATTGCTTGAGGCCATCAAATCCAGGGATTAC  
TTGCACTAATTCAAGTCTATGCAGAAGGGGTAGAGCTAATGGAACCACTGCTGGAACCTGGGCAGGAGCT  
TGGGGAGACAGCCCTTCACCTTGCCGTCCGAAGTGCAGATCAGACATCTCTCCATTTGGTTGACTTCCTT  
GTACAAAACCTGTGGGAACCTGGATAAGCAGACGGCCCTGGGAAACACAGTTCTTACACTACTGTAGTATGT  
ACAGTAAACCTGAGTGTGTTGAAGCTTTTGCTCAGGAGCAAGCCCACTGTGGATATAGTTAACAGGCTGG  
AGAACTGCCCTAGACATAGCAAAGAGACTAAAGCTACCCAGTGTGAAGATCTGCTTTCCAGGCTAAA  
TCTGGAAAGTTCAATCCACACGTCCACGTAGAATATGAGTGAATCTTCGACAGGAGGATAGATGAGA  
GCGATGATGATCTGGATGACAAACCAAGCCCTATCAAGAAAGAGCGCTCACCCAGACCTCAGAGCTTCTG  
CCACTCCTCCAGCATCTCCCCCAGGACAAGCTGGCACTGCCAGGATTGAGCACTCCAAGGGACAAACAG  
CGGCTCTCCTATGGAGCCTTCACCAACAGATCTTCGTTTCCACAAGCACAGACTCGCCACATCACCAA  
CCACGGAGGCTCCCCCTCTGCCTCTAGGAACGCGGGAAAGGTCCAAGTGGCCACCTTCAACTCTCC  
TCTAAGCACCCAGACCTCTAGTGGCAGCTCCACCCTATCCAAGAAGAGGCTCTCCCCCAGGAGGAA  
CACAAGAGAACCTATCCGACCTCCCAGCCCACTACCTCATGGGCCCCCAACAAAGGCGCAGTTCTCTT  
GGGGTAACCATGGGGGTCCATCTCTTCAAGTAAAGTACAAACAAGTTTGAGGGACTATCCAGCAGTC  
GAGCACCACTTCTGCAAGACTGCCCTTGGCCCAAGAGTTCTTCTAACTACCTCAGAAAGTGGCACTA  
AGGAAAACAGATCATCTCTCCCTAGACAAAGCCACCTCCCGCCCGAAATCTTTCAGAAATCATCAGAT  
TGGCAGAGTTGCCACAAAAGCCACCACCTGGAGACTGCCCCCAAGCCACAGAACTGGCCCAAGCC  
CCAAATGGAGATTTGCCGCTAAGCCAGGAGAACTGCCCCCAACACAGCTGGGGGACCTGCCACCC  
AAACCCCACTCTCAGACTTACCTCCCAACCAAGATGAAGGACCTGCCCCCAACACAGCTGGGAG  
ACCTGCTAGCAAAATCCCAGACTGGAGATGTCTACCCAAGGCTCAGCAACCTCTGAGGTCACTGAA  
GTACACCCATTGGATCTATCCCCAAATGTGAGTCCAGAGACGCCATCCAAAAGCAAGCATCTGAAGAC  
TCCAACGACCTCAGCCTACTCTGCCAGAGACGCGGTACCCTGCCAGAAAAATCAATACGGGGAAAA  
ATAAAGTGAGGCGAGTGAAGACATTTATGACTGCCAGGCAGACAACGATGACGAGCTCACATTTCATCGA  
GGGAGAAAGTGATTATCGTTCACAGGGGAAGAGGACCAGGAGTGGTGGATTGGCCACATCGAAGGACAGCCT  
GAAAGGAAGGGGGTCTTTCCAGTGTCTTTGTTTCATATCTGTCTGACTAGCAAAACGCAAGCCTTAAG  
ATTGTCACATCTTTCATGCAAGACTGCTGCCTTCATGTAACCTGGGCACAGTGTGTATATAGTGTCTG  
TTACAGAGTAAGAACTCATGGAAGGGCCACCTCAGGAGGGGATATAATGTGTGTGTAAATATCTCTG  
GGTTTTCTGCCTTACCAGTATGAGGGTAGCCTCGGACCCGGCGCGCTTACTGGTTTGCCAAAGCCATC  
CTTGGCATCTAGCACTTACATCTCTCTATGTCTTACAAGCAAACAAACAAAATAGGAGTATAGGAA  
CTGCTGGCTTTGCAAATAGAAGTGGTCTCCAGCAACCGTTGAAAGGCATAGAATTGACTCTGTTCTTAAC  
AATGCAAGTATCTCAATTGTGTTACTGAAAATGCAACATTAGCAAAGAGGTGGGTTCTGTTTTCCAGGTG  
AACTTTTAGCTCCATGACAGACCCGCTGTAGTTATCTGTGTACACAGTTTACAGCTACAAAACCTAC  
TTTGGTATTTATTACAGAAAAGTGTCTAGTTAAATGTAAGTGTATTCTTTCAGCAAAATATTCTAGC  
CCAAACTCTTTATGGCATTTTACAATGCACAGCCTCATGCAAGTTTAGACAAGTGGATTATATCTGT  
CTTATGAGTGGCCGCCCTGATATATTACCTCATTATGCAAAAATAACATATCTTTCTAGACTATTTTGA  
CAAAAGTTTAAACACATATGAAGTTCAAATTTTCAGGAACCAAGGACTGCCAGAAAATATTAGCCTCTAC  
ATTACGCATGCATTTAGAAGCTTACCTGAAATCTGCCTTTTATAAAGGAATAGTATGGATAAGTGGAAAT  
GTACATTTTTTAACTTGATTGCCATTAAAGCAGAAATTATAAGGTTGCAACAATATTGTTTCTAATCA  
CTGGCTTTCTCAAGAGTATGGATTGACATATTGTGTATGAATGCACATCTCTCAGATGTGTTGAAGCAT  
CCATTGCATCCATTTTTTATTATTTCTTAGTTTTGTTCTTGGACAAATTTAACTTTTAAAGATTATT  
CAAGATGAATTTAAAGTCAACCCCTTCACACAGTTTCCCTACTGTATGTAGAATCCAGGTGCTGAAACCA  
AGTGTTTCTTTTCCCATGCTCTTTGTTAAACCCCAATTATAGATAATTTTCCAGTCTTAAGCTCTGTCC  
ACCTTCAAGTCAATTCATAACCAAGTTTGTGAACGCTGCTATGAATTGCACTGTGAAAAGCACTCTTCCC  
TCTCAGTTTTCTTTTCATCCCAGCCATGTTTATCAGATCCTTAAGAACATTGTATTTTCACTCTTTTACAT  
CAGTCTGAATTTTGGAAAAGATGCAATAGTTGTACTCCACAGTCACTGGAAGTGTCCCTGAGTCCGAG  
GCTCATGTGCTATTCTGGCACTACATTGCTTAAATTGCTATTTTGGCAACAGCACAGAAAACATAATATT  
TTAAGCAGAGAATCTTGGCAATGAGTGAGAGATGTTAATTTTCACAGAAGCACAACTCCCAACCCAAACCC  
TTAGGAAAAGCCCTCTTCCATCGTTACAGTGCTCAGTGAATATTAATTTAGTTCTGCTTAAGTGGTGGCT  
ATACAACTTTGAATAGCCACCTAATAAATAAACCTTGCAAGCAAACTGCAAAATATTTTATCAGCTG  
TTATTGGAAAGTGATTTAAGCAATTGCTTCTCAGTGTGAGGGCACATGTGAATTTCCACACCAACAG  
AGCATGAGGAACCAAGTGCATGCTGGGTGTGACTGGCAGCTTTAGCAGCCTCGGTACTGAAGCCACAC  
CAGTGTCCGGATGGAAGTCTGCATCTGAGGTGCTCAGTGTCCCGTCACTTACATTACACATTTTAACTT  
GCATTAAGAGCTGTTCTTTCTGTGGCCTAGACTCTTTTCACTGATCTCAAATAAACTGGTTTTTTTC  
AAAAAAGAGCTGTTCTTTCTGTGGCCTAGACTCTTTTCACTGATCTCAAATAAACTGGTTTTTTTC  
AAAAAAGAGCTGTTCTTTCTGTGGCCTAGACTCTTTTCACTGATCTCAAATAAACTGGTTTTTTTC  
GTCTATTCTTTTCCCTTTTGCAGCAACTTACACAGCATTTTTTAACACCTTTTTTTTCTAGTTTTTTT

Figure 36 part - 25

TTCGGTTTTGTTTTCCATCAGGAATTTGAGTTCTCTCTAACCAGCTTACTGTGGGACATAGGAAAACTC  
AGTAGAAATACCTTTGGTGATCTTGTTGAGTTTAAAGTCTGATCTTGATCTTAAACTCAGTAAGCCACTAT  
CTGCAATTTTGTACATTATATAGTATTTTGAAGATATGGAACCTTATGAAAAAATAAGCAAATTAGTT  
CTTTTTCCCCCAGAGGGGAAAGTTATGTTCTGCAAATAGTGTGTCTTATTTTACTGTTGAACAGCAAT  
TGCTATTTATTTTTTATTGCCTAGAACTTCAACATGTTGTATAGGAATCCTGTAGTGCCACTAGTTAAA  
TGCCGAATTCCTCATCTGGATGTTACCATCAAACATCAGTACACTTGTCAATTCACATGTGTTAATGTGA  
CAGTTTTTCAGTACTGTATGTGTTAATTTCTACTTTTTTTAATATTTAAATTTGCTTTTAAATAAACATA  
TTCTCAGTTGATCCC

Human DDEF1 mRNA sequence - var3 (public gi: 7689053) (SEQ ID NO: 50)

GATTGCCATTAAAGCAGAAATTATAAGGTTGCAACAATATTTGTTTCTAATCACTGGCTTTCTCAAGAGT  
ATGGATTGACATATTGTGTTATGAATGCACATCTCTCAGATGTGTTGAAGCATCCATTGCATCCATTTTT  
TATTATTTTCTTAGTTTGTCTTGGACAAATTTAAACANNTTAAAAGATTATTCAAGATGAATTTAAAA  
GTCAACCTTTCACACAGTTTCCCTACTGTATGTAGAATCCAGGTGCTGAAACCAAGTGTCTTTTCCCA  
TGCTCTTTGTAACTCCAATTATAGATAATTTTCCAGTCTTAAGCTCTGTCCACCTTCAAGTCAATTC  
ATAACCAAGTTTTTGAACGCTGCTATGAATTGCACTGTGAAAAGCACTCTTCCCTCTCAGTTTTCTGTTCA  
TCCTGAGCCAGAATCAAAAAA

Human DDEF1 mRNA sequence - var4 (public gi: 16552319) (SEQ ID NO: 51)

CAGAACCTTAAGATTGTCCACATCCTTCATGCAAGACTGCTGCCTTCATGTAACCTGGGCACAGTGTGT  
ATATAGCTGCTGTTACAGAGTAAGAACTCATGGAAGGGCCACCTCAGGAGGGGGATATAATGTGTGTTG  
TAAATATCCTGTGTTTTCTGCCTTCACCAGTATGAGGGTAGCCTCGGACCCGCGCGCCTTACTGTTTT  
GCCAAAGCCATCCTTGGCATCTAGCACTTACATCTCTCTATGCTGTTCTACAAGCAAACAAACAAAAATA  
GGAGTATAGGAACTGCTGGCTTTGCAAATAGAAGTGGTCTCCAGCAACCGTTGAAAGGCATAGAATTGAC  
TCTGTTTCTTAACTGCAGTATTCTCAATTGTGTTACTGAAAATGCAACATTAGCAAAGAGGTGGGTTCT  
GTTTTCCAGGTGAACTTTTAGCTCCATGACAGACCAGCCTGTAGTTATCTGTGTACACAGTTTACAGCT  
ACAAAACCTACTTTGGTATTTATTACAGAAAAGTGTCTAGTTAAATGTAAGTGCTATTCTTTCAGCAA  
ATATTCACTGACCCAAACTCTTTATGCGATTTTACAATGCACACAGCCTCATGCAAGTTTAGACAAGTG  
GATTTATACTGTCTTATGAGTGCCCGCCCTGATATATTACCTCATTATGCAAAAAATAACATATCTTTCA  
TGACTATTTTGACAAAAGTTTAAACACATATGAAGTTCAAATTTTCAGGAACCAAGGACTGCCAGAAAAT  
ATTAGCCTCTACATTACGCATGCATTTAGAAGCTTACCTGAAATCTGCCTTTTATAAAGGAATAGTATGG  
ATAAGTGGAAATGTACATTTTAACTTGATTGCCATTAAAGCAGAAATTATAAGGTTGCAACAATATT  
TGTTTCTAATCACTGGCTTTCTCAAGAGTATGGATTGACATATTGTGTTATGAATGCACATCTCTCAGAT  
GTGTTGAAGCATCCATTGCATCCATTTTTTATTATTTTCTTAGTTTTGTTCTTGGACAAATTTAACTTT  
TAAAAGATTATTCAAGATGAATTTAAAGTCAACCTTTCACACAGTTTCCCTACTGTATGTAGAATCCAG  
GTGCTGAAACCAAGTGTCTTTTCCCATGCTCTTTGTAAACCCCAATTATAGATAATTTTTCCAGTCT  
TAAGCTCTGTCCACCTTCAAGTCAATTATAACCAAGTTTTTGAACGCTGCTATGAATTGCACTGTGAAA  
AGCACTCTTCCCTCTCAGTTTTCTTTTCATCCAGCCATGTTTATCAGATCCTTAAGAACATTGTATTTC  
AGTCTTTTACATCAGTCTGAATTTTGGAAAAGAATGCAATAGTTGTACTCCACAGTCAGTGGAAGTCTTC  
CCTGAGTCCGAGGCTCATGTGTCTTCTGGCACTACATTTGCTTAAATTGCTATTTTGGCAACAGCACAG  
AAAATAATATTTTAAAGCAGAGAATCTTGGCAATGAGTGAGAGATGTTAATTTACAGAAAGCACAACCTC  
CAACCCCAACCTTAGGAAAAGCCCTCTTCCATCGTTACAGTGCTCAGTGAATATTAATTTAGTTCTGCT  
TAAGTGTTGCTATACAACTTTGAATAGCCACCTAATAAATAAACCTTGCAAGCAAACTGCAAAATA  
TTTTATCAGCTGTTATTGGAAAGTGATTTTAAAGCAATTGCTTCTCAGTGTGAGGGCACATGTGAATTC  
CACACCAACAGAGCATGAGGAACAGTTGACATGTGGGTTGTGACTGGCAGCTTTAGCAGCCTCGGTA  
CTGAAGCCACACAGTGTCCGGATGGAAGTCTGCATCTGAGGTTGCTCAGTGTCCCGGTCATTCAATTAC  
ACATTTTAACTTGCATTAAAGAGCTGTTCTTTTCTGTGGCCTAGACTCTTTTCACTGATCTCAAAATAAA  
CTGGTTTTTTTT

Human DDEF1 mRNA sequence - var5 (public gi: 18088817) (SEQ ID NO: 52)

CAGCTACAAAAACCTACTTTGGTATTTATTACAGAAAAGTGTCTAGTTAAATGTAAGTGTATTCTCTTCA  
GCAAAATATTCACTGACCCAAACTCTTTATGGCATTTTACAATGCACACAGCCTCATGCAAGTTTAGAC  
AAGTGGATTTATACTGTCTTATGAGTGCCCGCCCTGATATATTACCTCATTATGCAAAATAACATATC  
TTTCATGACTATTTTGACAAAAGTTTAAACACATATGAAGTTCAAATTTTCAGGAACCAAGGACTGCCAG  
AAAATATTAGCCTCTACATTACGCATGCATTTAGCACTTACCTGAAATCTGCCTTTTATAAAGGATAG  
TATGGATAAGTGAATTTGACATTTTTTAACTTGATTGCCATTAAAGCAGAAATTATAAGGTTGCAACA  
ATATTTGTTTCTAATCACTGGCTTTCTCAAGAGTATGGATTGACATATTGTGTTATGAATGCACATCTCT  
CAGATGTGTTGAAGCATCCATTGCATCCATTTTTTATTATTTTCTTAGTTTTGTTCTTGGACAAATTTAA  
ACTTTTAAAGATTATTCAAGATGAATTTAAAGTCAACCTTTCACACAGTTTCCCTACTGTATGTAGAA  
TCCAGTGCTGAAACCAAGTGTCTTTTCCCATGCTCTTTGTTAAACCCCAATTATAGATAATTTTCC  
AGTCTTAAGCTCTGTCCACCTTCAAGTCAATTATAACCAAGTTTTTGAACGCTGCTATGAATTGCACTG  
TGAAGCACTCTTCCCTCTCAGTTTTCTTTTCATCCAGCCATGTTTATCAGATCCTTAAGAACATTGT

Figure 36 part - 26



CATCTCTCTATGCTGTTCTACAAGCAAAACAAACAAAAATAGGAGTATAGGAACTGCTGGCTTTGCAAATA  
GAAGTGGTCTCCAGCAACCGTTGAAAGGCATAGAATTGACTCTGTTCCCTAACAAATGCAGTATTCTCAATT  
GTGTTACTGAAATGCACATTTAGCAAAAGAGGTGGGTTCTGTTTTCCAGGTGAAACTTTTAGCTCCATGA  
CAGACCAGCCTGTAGTTATCTGTGTACACAGTTTACAGCTACAAAACTACTTTGGTATTTATTACAGA  
AAAGTGCTCAGTTAAATGTAAGTGTATTCTCTCAGCAAAATATTCACTGACCCAAAACCTTTATGGCA  
TTTTACAATGCACACAGCCTCATGCAAGTTTAGACAAGTGGATTTATACTGTCTTATGAGTGCCCGCCCC  
TGATATATTACCTCATTATGCAAAAAATAACATATCTTTTCTGACTATTTTGACAAAAGTTTAAAAACACAT  
ATGAAGTTCAAATTTTCCAGAACCAAGGACTGCCAGAAAATATTAGCCTCTACATTACGCATGCATTTAGA  
AGCTTACCTGAAATCTGCCTTTTATAAAGGAATAGTATGGATAAGTGAATTTGTACATTTTAAACTTG  
ATTGCCATTAAAGCAGAAATTATAAGGTTGCAACAATATTTGTTTCTAATCACTGGCTTTCTCAAGAGTA  
TGGATTGACATATTGTGTTATGAATGCACATCTCTCAGATGTGTTGAAGCATCCATTGCATCCATTTTTT  
ATTATTTTCTTAGTTTTGTTCTTGGACAAATTTAAACTTTTAAAGATTATTCAAGATGAATTTAAAGT  
CAACCTTTCACACAGTTTCCCTACTGTATGTAGAATCCAGGTGCTGAAACCAAGTGTCTTTTCCCATG  
CTCTTTGTTAAACCCCAATTATAGATAATTTTCCAGTCTTAAGCTCTGTCCACCTTCAAGTCAATTCAT  
AACCAAGTTTTTGAACGCTGCTATGAATTGCAGTGTGAAAAGCACTCTTCCCTCTCAGTTTTCTTTTCAT  
CCCAGCCATGTTTATCAGATCCTTAAGAACATTGTATTTTCACTCTTTTACATCAGTCTGAATTTTGGAAA  
AGAATGCAATAGTTGTACTCCACAGTCACTGGAACCTGTTCCCTGAGTCCGAGGCTCATGTGTCATTCTGG  
CACTACATTTGAGTTAAATTTGCTATTTTGGCAACAGCACAGAAAACCTAATATTTTAAAGCAGAGAACTTTG  
GCAATGAGTGAGAGATGTTAATTTACAGAAAGCACAACCTCCCAACCCCAACCTTAGGAAAAGCCCTCTTC  
CATCGTTACAGTGTCTCAGTGAATATTAATTTAGTTCTGCTTAAGTGGTTGCTATACAACTTTGAATAGC  
CACCTAATAAATAAACCTTGCATGACAAACCTGCAAAATATTTTATCAGCTGTTATTGGAAAGTGATTTT  
AAGCAATTGCTTCTCTCAGTGTGAGGGCACATGTGAATTTCCACACCAACAGAGCATGAGGAACCAAGTTG  
ACATGCTGGGTTGTGACTGGCAGCTTTAGCAGCCTCGGTACTGAAGCCACACCAGTGTCCGGATGGAAGT  
CTGCATCTGAGGTTGCTCAGTGTCCCGGTCACTTTACACATTTTAACTTGCATTAAAGAGTGTCTTCT  
TTTCTGTGGCCTAGACTCTTTTCACTGATCTCAAAATAAACTGGTTTTTTTCAAAAAAAAAAAAAAAAAACA  
AAAAACAAAAAAAAAACACAAAAGCTGCATGTCTAAAATTACATGGAGTTAGTGTCTATTCTTTTTCCCCT  
TTTGAGCAACTTACACAGCATTTTTTAACACCTTTTTTTTCTAGTTTTTTTGTTCGGTTTTGTTTTCCAT  
CAGGAATTTGAGTTCTCTTAACCCAGCTTACTGTGGGACATAGGAAAACCTCAGTAGAAAATACCTTTGGT  
GATCTTTGAGTTTAAAGTCTGATCTTAACTCAGTAAGCCACTATCTGCAATTTTGTACATTA  
TATAGTATTTTGAAGATATGGAACCTTATGAAAAAAATAGCAAATTAGTTCTTTTCCCCCAGAGGG  
AAAGTTATGTTCTGCAATAGTGTGTCTTATTTTACTGTTGAACAGCAATTGCTATTTATTTTTTTAT  
TGCCTAGAACTTCAACATGTTGTATAGGAATCCTGTAGTGCCACTAGTTAAATGCCGAATTCTCATCTGG  
ATGTTACCATCAAACATCAGTACACTTGTCAATTTACATGTGTTAATGTGACAGTTTTTCAGTACTGTA  
TGTGTTAATTTCTACTTTTTTTAATATTTAAAATTGCTTTTAAATAAACATATTCTCAGTTGATCCC

Human DDEF1 protein sequence - var1 (public gi: 31873728) (SEQ ID NO: 233)

ETKFTKIEKEKREHAKQHGMIRTEITGAETAEEMEKERRLFQLQMCEYLIKVNEIKTKKGVDLLQNLIKY  
YHAQC�FFQDGLKTADKLKQYIEKLAADLYNIKQTQDEEKKQLTALRDLIKSSLQLDQKEDSQRQGGYS  
MHQLQGNKEYGSEKKGYLLKSDGIRKQVQRRKCSVKNGILTI SHATSNRQPAKLNLLTCQVKPNAEDKK  
SFDLISHNRTYHFQAEDEQDYVAWISVLNKSKEEALTMFRGEQSAGENSLEDLTKAIIEDVQRLPGNDI  
CCDCGSSEPTWLSTNLGILTCIECSGIHREMGVHISRIQSLLELDKLGTSSELLAKNVGNNSFNDIMEANL  
PSPSPKPTPSSDMTVRKEYITAKYVDHFRFSRKTCTSSAKLNELLEAIKSRDLLALI QVYAEGVELMEPL  
LEPGQELGETALHLAVRTADQTS LHLVDFLVQNCNLDKQTALGNTVLHYCSMYSKPECLKLLRSKPTV  
DIVNQAGETALDIKRLKATQCEDLLSQAKSGKFNPHVHVEYEWNLQEEIDESDDDLDDKPSPIKKERS  
PRPQSFCSSSISPQDKLALPGFSTPRDKQRLSYGAFTNQIFVSTSDSPTSPTTEAPPLPPRNAGKGPT  
GPPSTLPLSTQTS SSGSSTLSKKRPPPPPGHKRTLSDPPSPLPHGPPNKGAVPWGNDGGPSSSSKTTNKF  
EGLSQSSSTSSAKTALGPRVLPKLPQKVALRKTDHLSLDKATIPPEIFQKSSQLAELPQKPPPGDLPPKP  
TELAPKQIGDLPPKPGELPPKQGLDLPKQPSDLPPKQMKDLPPKQGLDLLAKSQTGDVSPKAQQ  
PSEVTLKSHPLDLS PNVQSRDAIQQASEDSNDLTPTLPETPVPLPRKINTGKNKVRVKTIYDCQADND  
DELTFIEGEVIIIVTGEEDQEWIWIGHIEGQPERKGVFPVSFVHILSD

Human DDEF1 protein sequence - var2 (public gi: 6330854) (SEQ ID NO: 234)

KREHAKQHGMIRTEITGAETAEEMEKERRLFQLQMCEYLIKVNEIKTKKGVDLLQNLIKY YHAQC�FFQD  
GLKTADKLKQYIEKLAADLYNIKQTQDEEKKQLTALRDLIKSSLQLDQKESRRDSQRQGGYSMHQLQGN  
KEYGSEKKGYLLKSDGIRKQVQRRKCSVKNGILTI SHATSNRQPAKLNLLTCQVKPNAEDKKSF  
DLISHNRTYHFQAEDEQDYVAWISVLNKSKEEALTMFRGEQSAGENSLEDLTKAIIEDVQRLPGNDI  
CCDCGSSEPTWLSTNLGILTCIECSGIHREMGVHISRIQSLLELDKLGTSSELLAKNVGNNSFNDIMEANL  
PSPSPKPTPSSDMTVRKEYITAKYVDHFRFSRKTCTSSAKLNELLEAIKSRDLLALI QVYAEGVELMEPL  
LEPGQELGETALHLAVRTADQTS LHLVDFLVQNCNLDKQTALGNTVLHYCSMYSKPECLKLLRSKPTV  
DIVNQAGETALDIKRLKATQCEDLLSQAKSGKFNPHVHVEYEWNLQEEIDESDDDLDDKPSPIKKERS  
PRPQSFCSSSISPQDKLALPGFSTPRDKQRLSYGAFTNQIFVSTSDSPTSPTTEAPPLPPRNAGKGPT  
GPPSTLPLSTQTS SSGSSTLSKKRPPPPPGHKRTLSDPPSPLPHGPPNKGAVPWGNDGGPSSSSKTTNKF  
EGLSQSSSTSSAKTALGPRVLPKLPQKVALRKTDHLSLDKATIPPEIFQKSSQLAELPQKPPPGDLPPKP  
TELAPKQIGDLPPKPGELPPKQGLDLPKQPSDLPPKQMKDLPPKQGLDLLAKSQTGDVSPKAQQ  
PSEVTLKSHPLDLS PNVQSRDAIQQASEDSNDLTPTLPETPVPLPRKINTGKNKVRVKTIYDCQADND  
DELTFIEGEVIIIVTGEEDQEWIWIGHIEGQPERKGVFPVSFVHILSD

Figure 36 part - 28

LSTQTSSGSSTLSKKRPPPPPPGHKRTLSDPPSPPLPHGPPNKGAVPWGNDGGPSSSSKTTNKFEGLSQQS  
STSSAKTALGPRVLPKLPQKVALRKTDHLSLDKATIPPEIFQKSSQLAELPQKPPPGDLPPKPTLAPKP  
QIGDLPPKPGELPPKQGLDLPKQSDLPKPKQMDLPPKQGLDLLAKSQTGDVSPKAQQPSEVTLK  
SHPLDLSPNVQSRDAIQKQASEDSNDLTPTLPETPVPLPRKINTGKNKVRVKTIYDCQADNDELTFIE  
GEVIIVTGEEDQEWIWIGHIEGQPERKGVFPVSVFHILSD

Human DDEF1 protein sequence - var3 (public gi: 7689054) (SEQ ID NO: 235)  
MNAHLSVDLKHPLHPFFIIIFLVLFDDKFKXXKRLFKMNLKVNPSHSFPTVCRIQVLKPSVSFPMFLVKLO  
L

Human DDEF1 protein sequence - var4 (public gi: 18088818) (SEQ ID NO: 236)  
MNAHLSVDLKHPLHPFFIIIFLVLFDDKFKLLKDYSR

Human DDEF1 protein sequence - var5 (Predicted by Proteomics) (SEQ ID NO: 237)  
MIGQPQAEACRSHHKSHKALDQDRTALQKVKS VKAIYNSGQDHVQNEENYAQVLDKFGSNFLSRDNPDLG  
TAFVKFSTLTKESTLLKNLLQGLSHNVI FTLDLSLLKGLKGVKGDLLKPPDKAWKDYETKFTKIEKEKR  
EHAKQHGMIRTEITGAETAEEMEKERRLFQQLQMCYLIKVNEIKTKKGVLDLLQNLIKYYHAQCNFQDGL  
KTADKLKQYIEKLAADLYNIKQTQDEEKKQLTALRDLIKSSQLDQKESRRDSQSRQGGYSMHQLQGNKE  
YGSEKKGYLLKSDGIRKVVQRRKCSVKNGILTISHATSNRQPAKLNLLTCQVKPNAEDKKSFDLISHNR  
TYHFAEDEQDYVAWISVLTSNKEEALTMFRGEQSAGENSLEDLTAKIIEDVQRLPGNDICCDGSSSEP  
TWLSTNLGILTCEICSGIHREMGVHISRIQSLELDKLGTSSELLAKNVGNNSFNDIMEANLPSPSPKPTP  
SSDMTVRKEYITAKYVDHFRSRTCTSSAKNELLEAIKSRDLLALIQVYAGVELMEPLLEPGQELGE  
TALHLAVRTADQTS LHLVDFLVQNCNLDKQ TALGNTVLHYCSMYSKPECLKLLRSKPTVDIVNQAGET  
ALDIAKRLKATQCEDLLSQAKSGKFNPHVHVEYEWNLROEEIDESDDDLDDKPSPIKKERSPRPQSFCHS  
SSISPDKLALPGFSTPRDKQRLSYGAFTNQIFVSTSTDSPTSPTTEAPPLPRNAGKGP TGPPSTLPLS  
TQTSSGSSTLSKKRPPPPPPGHKRTLSDPPSPPLPHGPPNKGAVPWGNDGGPSSSSKTTNKFEGLSQQSST  
SSAKTALGPRVLPKLPQKVALRKTDHLSLDKATIPPEIFQKSSQLAELPQKPPPGDLPPKPTLAPKPQI  
GDLPPKPGELPPKQGLDLPKQSDLPKPKQMDLPPKQGLDLLAKSQTGDVSPKAQQPSEVTLKSH  
PLDLSPNVQSRDAIQKQASEDSNDLTPTLPETPVPLPRKINTGKNKVRVKTIYDCQADNDELTFIEGE  
VVIIVTGEEDQEWIWIGHIEGQPERKGVFPVSVFHILSD

Human DDEF1 pray sequence - var1 (SEQ ID NO: 54)  
GCGCCGCCATGGTAGTACCCATACGACGTACAGTATTACGCTCATATGGCCATGGCAGGCCAGTGAATT  
CCACACCAAGCAGTGGTATCAACGCAGAGTGGGCACAAAAGCCACGCACGCTGGANGACCTGCCCCAAC  
AGCCACAGAACTGGCCCCCAAGCCCCAAATTGGAGATTGCGCGCTAAGCCAGGAGAACTGCCCCCA  
AACCACAGCTGGGGGACCTGCCACCCAAACCCAACTCAGACTTACCTCCCAAACACAGATGAAGGA  
CCTGCCCCCCCAACCAACAGCTGGGAGACCTGCTAGCAAAATCCCAGACTGGAGATGTCTCACCCAAGGCT  
CAGCAACCCTCTGAGGTCACTGAAGTCAACCCATTGGATCTATCCCCAAATGTGCAGTCCAGAGACG  
CCATCCAAAAGCAAGCATNTGAAGACTCCAACGACCTCACGCTACTCTGCCAGAGACGCCCCGTACCACT  
GCCCANAAAAATCANTACGGGGAAAANTAAANTGAGGCGAGTGAAAACCTTTAATGACTGCCAGGCANAC  
ANNATGACAAAGCTCNATTCNTCNAGGGANAAGTGTTATCGTNCAGGGAAAAGNCCNGGATTGTGGGTCC  
NNCAATTTTTCNTCCNNTNTCNNACTTATTANAATNGCNCNNGGCAGGNNCCAATNGAACNCCNAANNNGN  
GAAAANAGGNNTTTNNNCAAGGANCNTNNMNTNGTTTNTTCCCNAAANNTTNTTNGGNNTTTTTTTTNC  
NCNCTTTTTTNTNNAAAAACNCGNANNNNNNNNCAAGGNNCCNNTNTNTNNTTNGGGGGGGGNGN  
NNTNNNGGGGGGNNNANACCCCCC

Unigene Name: EIF3S3 Unigene ID: Hs.58189 Clone ID: 3GD\_18

Human EIF3S3 mRNA sequence - var1 (public gi: 2351379) (SEQ ID NO: 55)  
GAAAGATGGCGTCCCGCAAGGAAGGTACCGGCTCTACTGCCACCTCTTCCAGCTCCACCGCCGGCGCAGC  
AGGGAAAAGGCAAAGGCAAAGGCGGCTCGGGAGATTTCAGCCGTGAAGCAAGTGCAGATAGATGGCCTTG  
GTATTAAAGATAATCAACATTATCAAGAAGAAGGACAAGGAAGTGAAGTTGTTCAAGGAGTGCTTTTGG  
GTCTGGTTGTAGAAGATCGGCTTGAAATTACCAACTGCTTTTCCTTTCCCTCAGCACACAGAGGATGATGC  
TGACTTTGATGAAGTCCAATATCAGATGGAAATGATGCGGAGCCTTCGCCATGTAAACATTGATCATCTT  
CACGTGGGCTGGTATCAGTCCACATACTATGGCTCATTCGTTACCCGGGCACTCCTGGACTCTCAGTTTA  
GTTACCAGCATGCCATTGAAGAATCTGTCGTTCTCATTTATGATCCCATAAAACTGCCCAAGGATCTCT  
CTCACTAAAGGCATACAGACTGACTCCTAAACTGATGGAAGTTTGTAAGAAAAGGATTTTCCCTGAA  
GCATTGAAAAAAGCAAATATCACCTTTGAGTACATGTTTGTAAGAAGTGCAGATTGTAATTAATAATTCAC  
ATCTGATCAATGTCTCTAATGTGGGAAGTGAAGAAGTCAAGTGTGTCAGATAAACATGAATTGCTCAG

Figure 36 part - 29



CCTTGCCAGCAGCAATCATTGTTGGGGAAGAATCTACAGTTGCTGATGGACAGAGTGGATGAAATGAGCCAA  
GATATAGTTAAATACAACACATACATGAGGAATACTAGTAAACAACAGCAGCAGAAACATCAGTATCAGC  
AGCGTCGCCAGCAGGAGAATATGCAGCGCCAGAGCCGAGGAGAACCCCGCTCCCTGAGGAGGACCTGTCT  
CAAACCTCTTCAAACCACCACAGCCGCCTGCCAGGATGGACTCGCTGCTCATTGCAGGCCAGATAAAACACT  
TACTGCCAGAACATCAAGGAGTTCACTGCCCCAAACTTAGGCAAGCTCTTCATGGCCCAGGCTCTTCAAG  
AATACAACAACCTAAGAAAAGGAAGTTTCCAGAAAAGAAGTTAACATGAACCTTTGAAGTCACACCAGGGC  
AACTCTTGGAAGAAATATATTTGCATATTGAAAAGCACAGAGGATTTCTTTAGTGTCTATTGCCGATTTTG  
GCTATAACAGTGTCTTTCTAGCCATAATAAAATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA  
AAAAAAAAAAAAAAAAAAAAA

Human EIF3S3 mRNA sequence - var2 (public gi: 21751901) (SEQ ID NO: 56)

AGGCGCGTAGCAAGAGCTTCTCTGAAAGACTGGCAGTATAGTAGTCACTGATAATATTGAGCCTTAA  
TATGTTCCAGACACTGTCCTAAGTGATTTACCTTACATTATTTCCCTGAATGTTTATAATTCCCAAGTGA  
AAGAAGGAAATGATATATTGGATAGCTATGAGTGGGGAGGTTTGTACTGGCTGCTTTCCCATAAAGAAAT  
TAAGCACGTTTACGAAGGGCACGTAGTTTGTAGTGTCTGGAACCCAGTTTTCGTGCCTGAAGTTCAAAT  
GTTCTTGCTACACCACCATAGAACTAACGTCACTCAGGAACCATTTGTCAGGGCAAAGGTTGCCACCAT  
TTTGCAATTTCTCTGCTTACGCTTAGGACCATCTAAATCACTCGCATGGAGTGTTTTGGAAGAACTCTCAAGA  
GCTTCGTTTTCCTAGCTCAGAATTCCTAACCTTGAGTCTGCTGTTTGGCCACAAACCCAGCCGTTTGAT  
CTTGGGCAACTCCCGAAGAAAGCTGGGTTCAACTTCTCACTGTCAAACCTGGTTGTAGGTCTAGATAAGT  
TTCAAGTACTCTTTTTATGTGCATGGTCTCTGACATAGGAAGACTACATACTGGGCCAGTAACAGGAAGG  
CACAAAGCTGACTGGAGGTTTTAAAAATTACTTGGTCAATTTGATTAATGAGGAGAATGAATCAGAAAATT  
TCAAGTTCTCCCGTGGCTAACTGTGAGTATCCACTTCAAGATCATTCCATCGGAAGAGGTGCAAAATG  
TACAGTAGGCATGCACAAAGGATACCGCCTGGAAAGAAGATGGCGTCCCGCAAGGAAGGTACCGGCTCTA  
CTGCCACCTCTTCCAGCTCCACCGCCGGCGCAGCAGGGAAAGGCAAAGGCAAAGGCGGCTCGGGAGATTC  
AGCCGTGAAGCAAGTGCAGATAGATGGCCTTGTGGTATTAAAGATAATCAAACATTATCAAGAAGAAGGA  
CAAGGAACTGAAGTTGTTCAAGGAGTGCTTTTGGGCTGGTGTAGAAAGATCGGCTTGAAATTACCAACT  
GCTTTCTCTTCCCTCAGCACACAGAGGATGATGCTGACTTTGATGAAGTCCAATATCAGATGGAATGAT  
GCGGAGCCTTCGCCATGTAAACATTGATCATCTTCACTGGGCTGGTATCAGTCCACATACATATGGCTCA  
TTGCTTACCCGGGCCTCCTGGACTCTCAGTTTAGTTACCAGCATGCCATTGAAGAATCTGTCTGTTCTCA  
TTTATGATCCCATAAAACTGCCCAAGGATCTCTCTCACTAAAGGCATACAGACTGACTCCTAAACTGAT  
GGAAGTTTGTAAGAAAAGGATTTTTCCCTGAAGCACTGAAAAAGCAAATATCACCTTTGAGTACATG  
TTTGAAGAAGTGCCGATTGTAATTAAAAATTACATCTGATCAATGTCCTAATGTGGGAAGTTGAAAAGA  
AGTCAGCTGTTGCAGATAAACATGAATTGCTCAGCCTTGCCAGCAGCAATCATTGGGGAAGAATCTACA  
GTTGCTGATGGACAGAGTGGATGAAATGAGCCAAGATATAGTTAAATACAACACATACATGAGGAATACT  
AGTAAACAACAGCAGCAGAAACATCAGTATCAGCAGCGTCGCCAGCAGGAGAATATGCAGCGCCAGAGCC  
GAGGAGAACCCCGCTCCCTGAGGAGGACCTGTCAAACCTCTTCAAACCAACACAGCCGCTGCCAGGAT  
GGACTCGCTGCTCATTGCAGGCCAGATAAACACTTACTGCCAGAACATCAAGGAGTTCACTGCCCAAAAC  
TTAGGCAAGCTCTTCATGGCCCAGGCTCTTCAAGAATACAACAACCTAAGAAAAGGAAGTTTCCAGAAAAG  
AAGTTAACATGAACCTCTGAAGTCACACCAGGGCAACTCTTGAAGAAAATATATTTGCATATTGAAAAGC  
ACAGAGGATTTCTTTAGTGTCTATTGCCGATTTTGGCTATAACAGTGTCTTTCTAGCCATAATAAAATAAA  
ACAAAATCTTG

Human EIF3S3 mRNA sequence - var3 (public gi: 12653234) (SEQ ID NO: 57)

GGCAGGAGGATGGCGTCCCGCAAGGAAGGTACCGGCTCTACTGCCACCTCTTCCAGCTCCACCGCCGGCG  
CAGCAGGGAAAGGCAAAGGCAAAGGCGGCTCGGGAGATTGAGCCGTGAAGCAAGTGCAGATAGATGGCCT  
TGTGGTATTAAAGATAATCAAACATTATCAAGAAGAAGGACAAGGAAGTGAAGTTGTTCAAGGAGTGCTT  
TTGGGTCTGGTTGTAGAAGATCGGCTTGAAATTACCAACTGCTTTCTTTCCCTCAGCACACAGAGGATG  
ATGCTGACTTTGATGAAGTCCAATATCAGATGGAATGATGCGGAGCCTTCGCCATGTAAACATTGATCA  
TCTTCAGGTGGGCTGGTATCAGTCCACATACATATGGCTCATTGTTACCCGGGCACTCCTGGACTCTCAG  
TTTAGTTACCAGCATGCCATTGAAGAATCTGTCTGTTCTCATTATGATCCCATAAAACTGCCCAAGGAT  
CTCTCTCACTAAAGGCATACAGACTGACTCCTAACTGATGGAAGTTTGTAAGAAAAGGATTTTTCCCC  
TGAAGCATTGAAAAAGCAAATATCACCTTTGAGTACATGTTTGAAGAAGTGCCGATTGTAATTAAAAAT  
TCACATCTGATCAATGTCTAATGTGGGAAGTTGAAAAGAAGTCAGCTGTTGCAGATAAACATGAATTGC  
TCAGCCTTGCCAGCAGCAATCATTGGGGAAGAATCTACAGTTGCTGATGGACAGAGTGGATGAAATGAG  
CCAAGATATAGTTAAATACAACACATACATGAGGAATACTAGTAAACAACAGCAGCAGAAACATCAGTAT  
CAGCAGCGTCGCCAGCAGGAGAATATGCAGCGCCAGAGCCGAGGAGAACCCCGCTCCCTGAGGAGGACC

Figure 36 part - 30

TGTCCAAACCTCTTCAAACCACCACAGCCGCCTGCCAGGATGGACTCGCTGCTCATTGCAGGCCAGATAAA  
CACTTACTGCCAGAACATCAAGGAGTTCACTGCCCCAAACCTTAGGCAAGCTCTTCATGGCCCAGGCTCTT  
CAAGAATACAACAACCTAAGAAAAGGAAGTTTCCAGAAAAGAGTTAACATGAACTCTTGAAGTCACACCA  
GGGCAACTCTTTGGAAGAAATATATTTGCATATTGAAAAGCACAGAGGATTTCTTTAGTGTCAATTGCCGAT  
TTTGGCTATAAACAGTGTCTTTCTAGCCATAATAAAAATAAAACAAATCTTGAAAAAATAAAAAA  
AAAAAATAAAAAAATAAAAAAATAAAAAA

Human EIF3S3 protein sequence - var1 (public gi: 12653235) (SEQ ID NO: 238)  
MASRKEGTGSTATSSSSTAGAAGKGKGKGGSGDSAVKQVQIDGLVVLKLIKHYQEEGGQTEVVQGVLLGL  
VVEDRLEITNCFPPQHTEDDADFDEVQYQMEMMRSLRHVNIDHLHVGWYQSTYYGSFVTRALLDSQFSY  
QHAIEESVVLIIYDPIKTAQGSLSLKAYRLTPKLMVEVCKEKDFSPEALKKANITFEYMFEEVPIVIKNSHL  
INVLMWEELEKKSAVADKHELLSLASSNHLGKNLQLLMDRVDEMSQDIVKYNTYMRNTSKQQQKHQYQQR  
QQENMQRQSRGEPPLPEEDLSKLFKPPQPPARMDSLLIAGQINTYQCNIKEFTAQNLGKLFMAQALQEY  
NN

Unigene Name: EPS8L2 Unigene ID: Hs.55016

Human EPS8L2 mRNA sequence - var1 (public gi: 21264615) (SEQ ID NO: 58)

GTGCACGGCCATTACCAATCGCGAAACCCCGCAACCTGTGCTCAGGTTCTCTCTCTCCCGGCCCGCCCGGCCCGGCCCGCCGAGCGTCCCACCCGCCCGGGGAGACCTGGCGCCCCGGCCGAGGCGGAACAGACGGACGCACCGCGGAGCGCCGAGGGGACAGGCGCGAGCGCGGGGCGCCGGAGGCGAGGTGTGGGACAGGCACTGGCCCTCAGACCGGGGCCACACTGAGGTTGCCCCCTCTCCCGCTGGCCGCCACCAAGACACCATGAGCCA GTCCGGGGCCGTGAGCTGCTGCCCGGGTGCCACCAATGCGAGCCTGGCGCGGTCCGACGCTGTGGCCAAAGATGAGCCCCAAGGACCTGTTTGAGCAGAGGAAGAAGTATTCCAACCTCCAACGTCATCATGCACGAGACCTCGCAGTACCACGTCCAGCACCTGGCCACATTATCATGAGACAAGAGCGAAGCCATCACGTCGTGTGGACGACGCCATCCGGAAGCTGCTGTCAGCTGAGCTCCAAGGAGAAGATCTGGACCCAGGAGATGCTGCTGCAGGTGAACGACCAGTCGTTGCGGCTGCTGGACATCGAGTACAGGAGGAGCTGGAAGACTTCCCGCTGCCACCGTGCAGCGCAGCAGCGGTCTCTCAACCAGTCGCGTACCCTGCTGTGCTGCTGTGCCAGGACTGGAGCAGAGCAAGCCGGATGTCCACTTCTTCCACTGCGATGAGGTGGAGGCAGAGCTGGTGCACGAGGACATCGAGAGCGGTTGGCCGACTGCCGGCTGGGCAAGAAGATGCGGCCGAGACCCCTGAAGGGACACCAGGAGAAGATTCGGCAGCGCGAGTCCATCCTGCCTCCTCCCCAGGGGCCGGCGCCCATCCCTTCCAGCACCGCGCGGGGATTCCCCGGAGGCAAGAATCGCGTGGGCGCCGAGGTGCCACTCAGCGAGCCAGGTTTCCGCGTCCGGGATTCGAGGAGGACCGCGGGCGGTGCTGGCTCAGAAGATAGAGAAGGACGCAAACTCTCAACTGCGCCTTGGACGACATCGAGTGGTTTGTGGCCGGCTGCGCTCAGAAGCGAGCCGAGGCTTTCAAGCAGCTGAACCAGCGGAAAAAGGGGAAGAAGAAGGGCAAGAAGGCGCCAGCAGAGGGCGTCTCTCACTGCGGGCACGGCCCCCTCTGAGGGCGAGTTCATCGACTGCTTCCAGAAAATCAAGCTGGCGATTAACTTGCTGGCAAAGCTGCGAGAAGCATCCAGAAACCCAGCGCCGCGAGCTCGTGCACTTCTCTTCGGGCCTCTGGACCTGATCGTCAACACCTGCAGTGGCCGACAGATCGCAGCTCCGTCTCTGCCACTGCTCTCCGAGATGCCGTGGACTTCTCGCGCGCCACCTGGTCCCTAAGGAGATGTGCTGTGGGAGTCACTGGGAGAGAGCTGGAATGCGGCCCCGTTCGAGTGGCCGCGGGAGCCACAGGTGCCCTCTACGTGCCAAAGTTCCACAGCGGCTGGAGCCTCTGTGGATGTGCTGCAGGAGGCCCCCTGGGAGGTGGAGGGGCTGGCGTCTGCCCCCATCGAGGAGGTGAGTCCAGTGAGCCGACAGTCCATAAGAAACTCCCAGAAGCAGCCCCACTTCAGAGCCCCACCCCCCCGGGATGCCCTACCACAGTCAGCTCCCCACATACAGAGGGCTACCAGCAACACAGCCATGCCCAAGTACGTCAAGATCCTGTATGACTTACAGCCGGAATGCCAAGAGCTATCGGTGCTCAAGGATGAGGTCTAGAGGTGCTGGAGGACGGCCGCGAGTGGTGGAAAGTGTGCGCAGCCGACGCGCCAGGCGGGGTACGTGCCCTGCAACATCCTAGGCGAGGCGCGACCGGAGGACGCCGGCGCCCCGTTCGAGCAGGCGGTCAGAAGTACTGGGCCCCCGCAGCCGACCAAGCTACCCCAAGCTTCCCGGGGAACAAAGACGAGCTCATGCAGCATAGGACGAGGTCAACGACGAGCTCATCGGCAAAATCAGCAACATCAGGGCGCAGCCACAGAGCACTTCCGCGTGAGCGCAGCGCCGCTGAGCCAGCCGCTACAGTACGAGTGGGTCCGGACGAGTCCGCGCCTGGCTGGAAGCCAAGGCCCTTACGCCCCGCGATCGTGGAGAACC'TGGGCATCCTGACCGGGCCGCAGCTCTTCTCCCTCAACAAGGAGGAGCTGAAGAAAGTGTGCGGCGAGGAGGGCGTCCGCGTGTACAGCCAGCTCACCATGCAAGGCTTCTTCTGAGGCGACAGAACTCCCTGGGGCTGGGGCCTCTTCTCTGGCCTCCCCTGTGCACCTGGGGGTCTCGGCTGTGATGCTCCCCCATCCCCACCACTTCTACATCCATCCACACCCAGGGTGA GTGGAGCTCCAGGTCGGCAGGCTGAACCTCGCACACGACAGCAGAGTTCTGCTCCTGAGGGGGCGGGGAGGGGCTCCAGCAGGAGGCCGTGGGTGCCATTTCGGGGGAAAGTGGGGGAACGACACACACTTCACTTCG



AAGGGCCGACAACGCAGGGGACACCGTGCCGGCTTCAGACACTCCCAGCGCCCACTCTTACAGGCCCAGG  
 ACTGGAGCTTTCTCTGGCCAAGTTTCAGGCCAATGATCCCCGCATGGTGTGGGGGTGCTGGTGTGTCTT  
 GGTGCCTGGACTTGAGTCTCACCCCTACAGATGAGAGGTGGCTGAGGCACCAGGGCTAAGCAATTAACCA  
 GTTAAGTCTCCCAGGAAAAAAAAAAAAAAAAA

Human EPS8L2 protein sequence - var1 (public gi: 21264616) (SEQ ID NO: 239)  
 MSQSGAVSCCPGATNGSLGRSDGVAKMSPKDLFEQRKKYSNSNVIMHETSQYHVQHLATFIMDKSEATIS  
 VDDAIRKLVQLSSKEKIWTQEMLLQVNDQSLRLLDIESQELEDFFLPVQVRSQTVLNQLRYPVLLLLVC  
 QDSEQSKPDVHFHCDEVEAEVLHEDIESALADCLRGKMRPQTLKGHEKIRQRQSILPPPGPAPIPF  
 QHRGSDSPEAKNRVGPQVPLSEPGFRRRESQEEPRAVLAQKIEKETQILNCALDDIEWFVARLQKAAEAF  
 KQLNQRRKKGKKKPAEGVLTLRARPPSEGEFIDCFQKIKLAINLLAKLQKHIONPSAAELVHFLFGP  
 LDLIVNTCSGPDARSVSCPLLSRDAVDVFLRGHLVPEKMSLWESLGEWMPRSEWPREPQVPLVVPKFH  
 SGWEPPVDVLQEPWEVEGLASAPIEEVSPVSRQSIRNSQKHSPTSEPTPPGDALPPVSSPHTRGYQPT  
 PAMAKYVKILYDFTARNANELSVLKDEVLEVLEDGRQWWKLRSRSGQAGYVPCNILGEARPEADAGAPFEQ  
 AGQKYWGPASPTHKLPPSPFPGNKDELMQHMDEVNDELIRKISNIRAQQRHFRVERSOPVSPQLTYESGP  
 DEVRAWLEAKAFSPRIVENLGIITGPQLFSLNKEELKKVCGEGRVVSQLTMQKAFLEKQQSGSELEEL  
 MNKFHSMNQRRGDS

Human EPS8L2 pray sequence - var1 (SEQ ID NO: 59)

TCNTNCGCCGCGCATGGNAGTACCCATACGACGTACCAGNATTACGCTCATATGGCCATGGNAGGCCAGTG  
 AATCCACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCGGGGGGAACAAAGACGAGCTCATGC  
 AGCACATGGACGAGGTCAACGACGAGCTCATCCGAAAATCAGCAACATCAGGGCGCAGCCACAGAGGCA  
 CTTCCGCGTGGAGCGCAGCCAGCCGCTGAGCCGCTCACCTACGAGTCCGGTCCGGACGAGGTCCGC  
 GCCTGGCTGGAAGCCAAGGCCTTCAGCCCGCGGATCGTGGAGAACCTGGGCATCCTGACCGGGCCGAGC  
 TCTTCTCCCTCAACAAGGAGGAGCTGAAGAAAGTGTGCGGCGAGGAGGGCGTCCGCGTGTACAGCCAGCT  
 CACCATGCAGAAGGCCTTCCTGGAGAAGCAGCAAAAGTGGTTCGAGCTGGAAGAACTCATGAACAAGTTT  
 CATTCCATGAATCAGAGGAGGGGGGAGGACAGCTAGGCCAGCTGCCTTGGGCTGGGGCCTGCGGAGGGG  
 AAGCCCAACCAATGTCATGGAGTATTATTTTATATGTGTATGTATTTTGTATCAAGGACACGGAGGGG  
 GGTGTGGTGTCTGGCTANAGGTCCCTGCCCTGTTTGGNAGGCACAACNCCCATNCTTTAGNCCAAANAG  
 TNACCCAANGGCCTNAACCCCAANCAAGNTTATTTTNNANCCAAACNNGNTTGNNTGGTTGGTNCCAAAC  
 CCNTTGTGGTGGCANNCCNTTGTNCAANTNTNTTTTNGNCCNANANAANTNCTNNGGGGTNGGGGGN  
 CNTTTTTNTNN

Human EPS8L2 pray sequence - , var2 (SEQ ID NO: 60)

CGAGCGCCGCTGGNATACCCATACGACGTACCAGNATTACGCTCATATGGCCATGGNAGGCCAGTGAAT  
 TCCACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCGGGGGGAACAAAGACGAGCTCATGCAGC  
 ACATGGACGAGGTCAACGACGAGCTCATCCGAAAATCAGCAACATCAGGGCGCAGCCACAGAGGCACTT  
 CCGCGTGGAGCGCAGCCAGCCGCTGAGCCAGCCGCTCACCTACGAGTCCGGTCCGGACGAGGTCCGCGCC  
 TGGCTGGAAGCCAAGGCCTTCAGCCCGCGGATCGTGGAGAACCTGGGCATCCTGACCGGGCCGAGCTCT  
 TCTCCCTCAACAAGGAGGAGCTGAAGAAAGTGTGCGGCGAGGAGGGCGTCCGCGTGTACAGCCAGCTCAC  
 CATGCAGAAGGCCTTCCTGGAGAAGCAGCAAAAGTGGTTCGAGCTGGAAGAACTCATGAACAAGTTTCAT  
 TCCATGAATCAGAGGAGGGGGGAGGACAGCTAGGCCAGCTGCCTTGGGCTGGGGCCTGCGGAGGGGAAG  
 CCCACCCACAATGTCATGGAGTATTATTTTATATGTGTATGTATTTTGTATCAAGGACACGGAGGGGTG  
 TGGTGTCTGGCTANAGTTCCCTGCCCTTGTNTGGAGGCACACNCCCATCCTTAGGCCAAACANTACCNAGG  
 NCTNANCCCAACCAANACTATTTTAAACNAACTNNTTGGTGGTGGCANNCCNTTGGTGNNTCCNC  
 CCNTTNTCCNTTTTTTTTNGNCCNAAAATTCNTGGGGCTGGGCNTTTTTTTTGGCANNCCCTTNNNNCN  
 TNGGGGTCTGGNCCNTNNNTNTNCCCCTNCCCCNTTTTTNNNTNTN

Human GOCAP1 mRNA sequence - var1 (public gi: 10438060) (SEQ ID NO: 61)

GATACGTGGCTGCCGTCTGTCCCCGCTGAGGAGGTGCAGCAGCCGAGATGGCGGCGGTGCTGAACGCAG  
 AGCGACTCGAGGTGTCCGTGCAGCGCCTCACGCTCAGCCCGACCCGAGGAGCGGCCTGGGGCGGAGGG  
 CGCCCCGCTGCTGCCGCCACCGCTGCCACCGCCTCGCCACCTGGATCCGGTCCGCGCCCGGGCGCCTCA  
 GGGGAGCAGCCGAGCCCGGGAGGCGCGGCTGGGGCGCGGCGGAGGAGGCGCGGCGGCTGGAGCAGC  
 GCTGGGGTTTCGGCTGGAGGAGTTGTACGGCTGGCACTGCGCTTCTTCAAAGAAAAAGATGGCAAAGC  
 ATTTTCATCCAACCTTATGAAGAAAAATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGGGCCATAT  
 AATCCAGACACTTGTCTGAGGTTGGATTCTTTGATGTGTTGGGAATGACAGGAGGAGAGAATGGGCAG  
 CCCTGGGAAACATGTCTAAGAGGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTTGCCATCT  
 CTTTTCAACATATGTTGCGTCCCAACAAATAGAGAAGGAAGCAAGACAAAAAAGGAAGGAGGAAGAG  
 GAGCGAAGGCGCGTGAAGAGGAAGAAAGAGAACGTCTGCAAAAGGAGGAAGAGAAACGTAGGAGAGAAG  
 AAGAGGAAGGCTTCGACGGGAGGAAGAGGAAGGAGACGGATAGAAGAAGAAAGGCTTCGGTTGGAGCA

Figure 36 part - 32

GC AAAAGCAGCAGATAATGGCAGCTTTAAACTCCCAGACTGCCGTGCAGTTCAGCAGTATGCAGCCAA  
CAGTATCCAGGGAACTACGAACAGCAGCAAATTTCTCATCCGCCAGTTGCAGGAGCAACACTATCAGCAGT  
ACATGCAGCAGTTGTATCAAGTCCAGCTTGCACAGCAACAGGCAGCATTACAGAAAACAACAGGAAGTAGT  
AGTGGCTGGGTCTTCTTGCCTACATCATCAAAGTGAATGCAACTGTACCAAGTAATATGATGTCAGTT  
AATGGACAGGCCAAAACACACACTGACAGCTCCGAAAAAGAACTGGAACCAGAAGCTGCAGAAGAAGCCC  
TGGAGAATGGACAAAAGAATCTCTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTCAGATCAA  
AGACTTCAAAGAGAAGATTACAGCAGGATGCAGATTCCGTGATTACAGTGGGCCGAGGAGAAGTGGTCACT  
GTTTCAGTACCCACCCATGAAGAAGGATCATATCTCTTTTGGGAATTTGCCACAGACAATTATGACATTG  
GGTTTGGGGTGTATTTTGAATGGACAGACTCTCCAAACACTGCTGTGCAGCGTGCATGTGAGTGCAG  
CGATGACGACGAGGAGGAAGAAGAAAACATCGGTTGTGAAGAGAAAGCCAAAAGAATGCCAACAAAGCCT  
TTGCTGGATGAGATTGTGCCTGTGTACCGACGGGACTGTGCATGAGGAGGTGTATGCTGGCAGCCATCAAT  
ATCCAGGGAGAGGAGTCTATCTCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAATCAGTCTA  
CTACAGAGTCTATTATACTAGATAAAAAATGTTGTTACAAAGTCTGGAGTCTAGGGTTGGGCAGAAGATGA  
CATTTAATTTGGAAATTTCTTTTACTTTTGTGGAGCATTAGAGTCACAGTTTACCTTATTGATATTGGT  
CTGATGGTTTGTGAACCTTGTCTGGGAATCAAATTTCTTGTGAGACTCTTTAGCATTTCATCTTTGGGGT  
TAAAGGAGATTCTCAGACTCATCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGTGGATGCTGAAGT  
TACATGAGCTACATGTTAAATATTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTACCCGGCTG  
ATGGTTAGCCCTTGTCTGCCTGCTCCATGTGTCTTATGAGAGCCCGTAGTTACAGTGTCTCTAATTTGA  
AATCCATAAGTTAAACAAGTCTATATCAGGTGCAGTGGCTTTGATTAAAGGCCATTTTAAACTTAAAA  
ACTCAACACCTCACAGATTATAAAAAAAAAAAAAAAAAAAAAA

Human GOCAP1 mRNA sequence - var2 (public gi: 15826851) (SEQ ID NO: 62)

GG AAGTCGATACGTGGCTGCCTTCTGTCCCCGTGAGGAGGTGCAGCAGCCGAGATGGCGGCGGTGCTG  
AACGCAGAGCGACTCGAGGTGTCCGTGCACGGCTCAGCTCAGCCCGGACCCGGAGGAGCGGCCTGGGG  
CGGAGGGCGCCCCGCTGCTGCCGCCACCGCTGCCACCGCCCTCGCCACCTGGATCCGGTTCGCGGCCCGGG  
CGCCTCAGGGGAGCCTCCGAGCCCGGGGAGGCGCGCTGGGGGCGCGGCGGAGGAGGCGCGCGCTG  
GAGCAGCGCTGGGGTTTCGGCTGGAGGAGTTGTACGGCTGGCACTGCGCTTCTTCAAAGAAAAAGATG  
GCAAAGCATTTTATCCAACTTATGAAGAAAAATGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGG  
CCCATATAATCCAGACACTTGTCTGAGGTTGGATTCTTTGATGTGTTGGGGAATGACAGGAGGAGAGAA  
TGGGCGACCCCTGGGAAACATGTCTAAAGAGGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTT  
GCCATCTCTTTTCAACATATGTTGCGTCCCAAAAATAGAGAAGGAAGAGCAAGAAAAAAGGAAGGA  
GGAAGAGGAGCGAAGGCGGCTGAAGAGGAAGAAAGAGAACGCTCTGCAAAGGAGGAAGAGAAACGTAGG  
AGAGAAGAAGAGGAAAGGCTTCGACGGGAGGAAGAGGAAGGAGACGGATAGAAGAAGAAAGGCTTCGGT  
TGGAGCAGCAAAAGCAGCAGATAATGGCAGCTTTAAACTCCCAGACTGCCGTGCAGTTCAGCAGTATGC  
AGCCCAACAGTATCCAGGAACTACGAACAGCAGCAAATTTCTCATCCGCCAGTTGCAGGAGCAACACTAT  
CAGCAGTACATGCAGCAGTTGTATCAAGTCCAGCTTGCACAGCAACAGGCAGCATTACAGAAAACAACAGG  
AAGTAGTAGTGGCTGGGTCTTCTTGCCTACATCATCAAAGTGAATGCAACTGTACCAAGTAATATGAT  
GTAGTTAATGGACAGGCCAAAACACACACTGACAGCTCCGAAAAAGAACTGGAACCAGAAGCTGCAGAA  
GAAGCCCTGGAGAATGGACAAAAGAATCTCTTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTC  
AGATCAAAGACTTCAAAGAGAAGATTACAGCAGGATGCAGATTCCGTGATTACAGTGGGCCGAGGAGAAGT  
GGTCACTGTTTCGAGTACCCACCTATGAAGAAGGATCATATCTCTTTTGGGAATTTGCCACAGACAATTAT  
GACATTGGGTTTGGGGTGTATTTTGAATGGACAGACTCTCCAAACACTGCTGTGCAGCGTGCATGTGAGT  
AGTCCAGCGATGACGACGAGGAGGAAGAAGAAAACATCGGTTGTGAAGAGAAAGCCAAAAGAATGCCAA  
CAAGCCCTTGTGCTGGATGAGATTGTGCCTGTGTACCGACGGGACTGTGCATGAGGAGGTGTATGCTGGCAGC  
CATCAATATCCAGGGAGAGGAGTCTATCTCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAAT  
CAGTCTACTACAGAGTCTATTATACTAGATAAAAAATGTTGTACAAAGTCTGGAGTCTAGGGTTGGGCAG  
AAGATGACATTTAATTTGGAAATTTCTTTTACTTTTGTGGAGCATTAGAGTCACAGTTTACCTTATTGA  
TATTGGTCTGATGGTTTGTGAACCTTGTCTGGGAATCAAATTTCTTGTGAGACTCTTTAGCATTTCATCT  
TTGGGGTTAAAGGAGATTCTCAGACTCATCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGTGGATG  
CTGAAGTTACATGAGCTACATGTTAAATATTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTAC  
CCGGCTGATGGTTAGCCCTTGTCTGCCTGCTCCATGTGTCTTATGAGAGCCCGTAGTTACAGTGTCTCT  
AATTTGAAATCCATAAGTTAAACAAGTCTATATCAGGTGCATCTGGCTTTGATTAAAGGCCATTTTAAAA  
CTTAAAACTCAACACCTCACAGATTATAATAGAAAAAGAAATGGCCTCAGTTTGATCTCGTTTCAGATG  
ACCCAGATTGTTCTGCTTTGGGTGCAGCTGTTTAGTTCAGAGTTATATTACAGAGAATTATTTTCTGAG  
ATAATCTTAACTAGAATGTTCAAACCTAATTGATAATTGAAGTATCAAGATACGTAGAACACCTCAGAG  
ATTTTCTTCAGGAACCTTCCACAACTTTGAATCCTTGATCTTTATTTGGTATTTCATCTACTAGTAGC  
AAAATACAGGTTTTTGTGTTTTGTTTTGGCTTCACTAGAGTATCTCAAATGAAACTTTTCTGCACA  
AAGAATAAAATTAAGGATTTTATAAACTCAAATGGCACCTACTGAATTAATAATACATAAAATCATTAA  
ATATAATTAGCATATGGGAAGTAACATTGCACATAATGGAATCACTGCCAGAGACAGTCTATTTTCT  
TTTAATTTGTTACTACTTAGTCACAAACCCACATTATCCAGTTTGGAAATTAATTAAAGGAGAAATG  
GAAATACATATGCCCTTAAATTTTATAGCTTAAATTTGTGTTATTTCTTTATTGACGGGAAGAGGT  
ACATCTTTTTTCTTACTGAAAACCAATATGGATTAATGCCTCAAATTTGTATAAAGTGATTGGCTA  
GTGATCTTGTTTTTCAGGAAGGAGAGTGGTATAGATAGAAAATGACAAAGATGGCAATATACACTTAAT

Figure 36 part - 33

GTGTTATTGTATGTTGTTACTGAAGTACTTAGATTTTTTAAATTTCAAATCCTAAATCACTTCTTGTAG  
GAGGGTTTTTCATTAAGTGCAGTATATACAGTTCCTACATATGGGTTGTTTGAGTTTTTGTGTGCTGTA  
TTTCTTTCTGTTTTTTTAAATACCTGGTTTTGTACATATCTAACTCTGTTCTCTTTTGGTTGTTTCAGAAAC  
TGGATTTTTTTTTTTCTTAAGCAGTGCTTAATTTGTGTTTTTAAATTTTGATTGAGAAGTAGTCCCAGC  
TCATAGGTGTTTATAACTGTTACATCCAGAACATTTGTCAGGCTCTCTGTCAGCTTTTCATGTACATATG  
GTATAGAAACCATGGAGTTAGGCCTTCCCTGGAATTTTTTTTTTATGAGAAAAATACTGTATTTAAAA  
TGTAATAAACTTTTAAAAAGCAGGCACTAATATATATTTCTTCCAGCCTTTGATTACAAATTTGTCTT  
TGCACATGTTAAGATGAATTATCTCTAAAAATATCATTGTTCTTGGGAGCAGTGTATGTTACTTTACAT  
AGCAGCGGTTCTGTCTGTGTTTATGTTTCAAGAAATATTTTGGTTTTTAACTTTCTTATTGCCCTTTGGC  
TGTTGATTAGTACAGTACAAGTTGCGATTTCAAAAAGATCTTGAAAGTAATATATTTAATCAATAAAAAT  
GTTTATCTGTAAAAAATAAAAAAAAAA

Human GOCAP1 mRNA sequence - var3 (public gi: 15799258) (SEQ ID NO: 63)  
GGAAGTCGATACGTGGCTGCCTTCTGTCCCGCTGAGGAGGTGCAGCAGCCGAGATGGCGGCGGTGCTG  
AACGCAGAGCGACTCGAGGTGTCCGTGACAGCGCTCACGCTCAGCCCGGACCCGGAGGAGCGGCCTGGGG  
CGGAGGGCGCCCCGTGCTGCCGCCACCGTGCCACCGCCCTCGCCACCTGGATCCGGTCGCGGCCCGGG  
CGCCTCAGGGGAGCAGCCGAGCCGAGGCGGCGGCTGGGGGCGCGGCGGAGGAGCGCGCGGCGCTG  
GAGCAGCGCTGGGGTTTCGGCCTGGAGGAGTTGTACGGCCTGGCACTGCGCTTCTTCAAAGAAAAAGATG  
GCAAAGCATTTTCATCAACTTATGAAGAAAAATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGG  
CCCATATAATCCAGACACTTGTCTGAGTTGGATTCTTTGATGTGTTGGGGAATGACAGGAGGAGAGAA  
TGGCGAGCCCTGGGAAACATGTCTAAAGAGGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTT  
GCCATCTCTTTTTCAACATATGTTGCGTCCCAAAAATAGAGAAGGAAGAGCAAGAAAAAAGGAAGGA  
GGAAGAGGAGCGAAGGCGGCGTGAAGAGGAAGAAAGAGAACGCTCTGCAAAGGAGGAAGAGAACGTTAGG  
AGAGAAGAAGAGGAAAGGCTTCGACGGGAGGAAGAGGAAGAGACGGATAGAAGAAGAAAGGCTTCGGT  
TGGAGCAGCAAAAGCAGCAGATAATGGCAGCTTTAACTCCAGACTGCCGTGCAGTTCCAGCAGTATGC  
AGCCCAACAGTATCCAGGGAACACGAACAGCAGCAAAATCTCATCCGCCAGTTGCAGGAGCAACACTAT  
CAGCAGTACATGCAGCAGTTGTATCAAGTCCAGCTTGACAGCAACAGGCAGCATTACAGAAACACAGG  
AAGTAGTAGTGGCTGGGTCTTCTTGCCTACATCATCAAAAGTGAATGCAACTGTACCAAGTAATATGAT  
GTCAGTTAATGGACAGGCCAAAACACACACTGACAGCTCCGAAAAAGAACTGGAACCAAGAGTGCAGAA  
GAAGCCCTGGAGAATGGACCAAAAGAATCTCTTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTC  
AGATCAAAAGACTTCAAAGAGAAGATTGAGCAGGATGAGATTCCGTGATTACAGTGGGCGGAGGAGAAGT  
GGTCACTGTTTCGAGTACCCACCCATGAAGAAGGATCATATCTCTTTTGGGAATTTGCCACAGACAATTAT  
GACATTGGGTTTGGGGTGTATTTGAATGGACAGACTCTCCAAACACTGCTGTGACGCTGCATGTCAAGT  
AGTCCAGCGATGACGACGAGGAGGAAGAAGAAAACTCGGTTGTGAAGAGAAAGCCAAAAAGAAATGCCAA  
CAAGCCTTTGCTGGATGAGATTGTGCCTGTGTACCGAGCGGACTGTCATGAGGAGGTGTATGCTGGCAGC  
CATCAATATCCAGGGAGAGGAGTCTATCTCCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAAT  
CAGTCTACTACAGAGTCTATTATACTAGATAAAAAATGTTGTACAAAGTCTGGAGTCTAGGGTTGGGCG  
AAGATGACATTTAATTTGGAAATTTCTTTTACTTTTGTGGAGCATTAGAGTCACAGTTTACCTTATTGA  
TATTGGTCTGATGTTTGTGAATCTTGTCTGGGAATCAAAATTTCTTGGAGTCTTTAGCATTCTACT  
TTGGGGTTAAAGGAGATTCTCAGACTCATCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGTGGATG  
CTGAAGTTACATGAGCTACATGTTAAATATTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTAC  
CCGCTGATGGTTAGCCCTTGTGCTGCTCCATGTGTCTTATGAGAGCCCGTAGTTACAGTGTCTCT  
AATTTGAATCCATAAGTTAAAGTCTATATCAGGTGCATCTGGCTTTGATTAAAGGCCATTTTTAAAA  
CTTAAAAACTCAACACCTCACAGATTATAATAGAAAAAGAAATGGCCTCAGTTTGATCTCGTTCAGAAATG  
ACCCAGATTGTTTCTGCTTTGGGTGCAGCTGTTTAGTTCAGAGTTATATTACAGAGAATTATTTTCTGAG  
ATAATCTTAACTAGAATGTTCAAACTAATTGATAATTGAAGTATCAAGATACGTAGAACACCTCAGAG  
ATTTTCTTCAGGAACCTCCACAACTTTGAATCCTGTATCTTTATTTGGTATTCTACTACTAGTAGC  
AAAATACAGGTTTTTTGTTTTGTTTTGGCTTCATAGAGTATCTCAAATTGAACTTTTCTGCACA  
AAGAATAAAATTAAGGATTTTATAAACTCAAATTTGGCACCTACTGAATTAATAATACATAAAATCATTTAA  
ATATAATTGAGCATATGGGAAGTAACATTGCACTAATATGGAATCACTGCCAGAGACAGTCTATTTCT  
TTTAATTTGTTACTACTTAGTCACAAACCCACATTATCCAGTTTGGAAATTACTTATTAAGGAGAATTG  
GAAATACATATGCCCATGCTTAAATTTTATAGCTTAAATTTGTGTTATTTCTTTATTGACGGGAAGAGGT  
ACATCTTTTTTCTTACTGAAACCAATATGGATTAATTGCCTCAAATTTGTATAAAGTATTGGCTA  
GTGATCTTGTTTTCAGGAAGGAGAGTGGTATAGATAGAAAATGACAAAGATGGCAATATACACTTAAT  
GTTGTTATTGTATGTTGTTACTGAAGTACTTAGATTTTTTAAATTTCAAATCCTAAATCACTTCTTGTAG  
GAGGGTTTTTCATTAAGTGCAGTATATACAGTTCACTACATATGGGTTGTTTGAGTTTTTTGTGTGCTGTA  
TTTTCTTCTGTTTTTTTAACTACCTGGTTTTGTACATATCTAACTCTGTTCTCTTTTGGTTGTTTCAGAAAC  
TGGATTTTTTTTTTTTCTTAAGCAGTGCTTAATTTGTGTTTTTAAATTTTGATTGAGAAGTAGTCCCAGC  
TCATAGGTGTTTATAACTGTTACATCCAGAACATTTGTGAGGCTCTCTGTCAGCTTTTCATGTACATATG  
GTATAGAAACCATGGAGTTAGGCACTTCCCTGGAATTTTTTTTTTATGAGAAAAATACTGTATTTAAAA  
TGTAATAAACTTTTAAAAAGCAGGCACTAATATATATTTCTTCCAGCCTTTGATTACAAATTTGTCTT  
TGCACATGTTAAGATGAATTATCTCTAAAAATATCATTGTTCTTGGGAGCAGTGTATGTTACTTTACAT  
AGCAGCGGTTCTGTCTGTGTTTATGTTTCAAGAAATATTTTGGTTTTTAACTTTCTTATTGCCCTTTGGC

Figure 36 part - 34

TGTTGATTAGTACAGTACAAGTTGCGATTTCAAAAAGATCTTGAAAGTAATATATTTAATCAATTAAAAAT  
GTTTATCTGTAAAAA

Human GOCAP1 mRNA sequence - var4 (public gi: 21961496) (SEQ ID NO: 64)  
CGGACGCGTGGGTGCCATCTCTTTTCAACATATGTTGCGTCCCAAAAATAGAGAAGGAAGAGCAAGAAA  
AAAAAAGGAAGGAGGAAGAGGAGCGAAGGCGGCGTGAAGAGGAAGAAAGAGAACCTCTGCAAAAGGAGGA  
AGAGAAACGTAGGAGAGAAGAAGAGGAAAGGCTTCGACGGGAGGAAGAGGAAAGGAGACGGATAGAAGAA  
GAAAGGCTTCGGTTGGAGCAGCAAAAGCAGCAGATAATGGCAGCTTTAAACTCCCAGACTGCCGTGCAGT  
TCCAGCAGTATGCAGCCCCAACAGTATCCAGGGAACACGAAACAGCAGCAAAATCTCATCCGCCAGTTGCA  
GGAGCAACACTATCAGCAGTACATGCAGCAGTTGTATCAAGTCCAGCTTGACAGCAACAGGCAGCATTA  
CAGAAACAACAGGAAGTAGTAGTGGCTGGGTCTTCCTTGCCCTACATCATCAAAAGTGAATGCAACTGTAC  
CAAGTAATATGATGTCAGTTAATGGACAGGCCAAAACACACACTGACAGCTCCGAAAAGAAGTGAACC  
AGAAGCTGCAGAAGAAGCCCTGGAGAATGGACAAAAGAATCTCTCCAGTAATAGCAGCTCCATCCATG  
TGGACACGACCTCAGATCAAAGACTTCAAAGAGAAGATTGAGCAGGATGCAGATTCCGTGATTACAGTGG  
GCGAGGAGAAGTGGTCACTGTTGAGTACCCACCTGAAGAAGGATCATATCTCTTTGGGAATTTGC  
CACAGACAATTATGACATTGGGTTTGGGGTGTATTTGAATGGACAGACTCTCCAAACACTGCTGTGTCAGC  
GTGCATGTCAGTGAAGTCCAGCGATGACGACGAGGAGGAAGAAGAAAACATCGGTTGTGAAGAGAAAAGCCA  
AAAAGAATGCCAACAAGCCCTTGCTGGATGAGATTGTGCTGTGTACCGACGGGACTGTGATGAGGAGGT  
GTATGCTGGCAGCCATCAATATCCAGGGAGAGGAGTCTATCTCTCAAGTTTGACAACCTCTACTCTTTG  
TGGCGGTCAAAATCAGTCTACTACAGAGTCTATTATACTAGATAAAAATGTTGTTACAAAGTCTGGAGTC  
TAGGGTTGGGCAGAAGATGACATTTAATTTGGAAATTTCTTTTTACTTTTGTGGAGCATTAGAGTCACAG  
TTTACCTTATTGATATTGGTCTGATGGTTTGTGAACCTCTGCTGGGAATCAAATTTCTTTGAGACTCTT  
TAGCATTCACTTTTGGGGTTAAAGGAGATTCTCTAGACTCATCCAGCCCTTGGGTGCTGACCAAGCAGAG  
TCACTAGTGGATGCTGAAGTTACATGAGCTACATGTTAAATATTTAAAGTCTCCAAAATAAAACACCCCA  
ACGTTTGACCTTACCCTGCTGATGGTTAGCCCTTGTGCTGCTCCATGTGTCTTATGAGAGCCCGTAGT  
TACAGTGTCTCTAATTTGAAATCCATAAGTTAACAAAGTCTATATCAGGTGCAGCTGGCTTTGATTAAAG  
GCCATTTTAAACTTAAACTCAACACCTCACAGATTATAATAGAAAAGAAATGGCCTCAGTTTGAT  
CTCGTTGAGAATGACCCAGATTGTTTCTGCTTGGGTGCAGCTGTTTAGTTGAGATTATATTACAGAGA  
ATTATTTCTGAGATAATCTTAAACTAGAATGTTCAAACTAATTGATAATTGAAGTATCAAGATACGTA  
GAACACCTCAGAGATTTTCTTCAGGAACCTCCACAACTTTGAATCCTTGATCTTTATTTGGTATTCA  
TACTACTAGTAGCAAAATACAGGTTTTTTGTTTTGTTTTGTTTTGTTTTGTTTTGTTTTGTTTTGTTTTG  
TTGAACTTTTCTGCACAAAGAATAAAATTAAGGATTTTATAAACTCAAATTTGGCACCTACTGAATTTAA  
ATACATAAAATCATTTTAAATATAATTCAGCATATGGGAAGTAACATTGCACTAATATGGAATCACTGCC  
AGAGACAGTCTATTTTCTTTAATTTGTTACTACTTAGTCACAAACCCACATTATTCAGTTTGGAAAT  
ACTTATTAAGGAGAATTGGAATACATATGCCATGCTTAAATTTTATAGCTTTAATTTGTGTTATTTCT  
TTATTGACGGGAAGAGGTACATCTTTTTTCTTCTTACTGAAAACAAATATGGATTAATTGCTCAAAATTTG  
TATAAGTGATTGGCTAGTGATTCTTGTCTTTCAGAAAGGAGAGTGGTATAGATAGAAAATGACAAAGATGG  
CAATATACACTTAATGTTGTTATTGTATGTTGTTACTGAAGTACTTAGATTTTTTAAATTTCAAATCCTA  
AATCACTTCTTGTAGGAGGGTTTTTCATTAAGTGCAGTATATACAGTTCACTACATATGGGTGTTTGTAGT  
TTTTTGTGCTGTATTTCTTTCTGTTTTTAATACCTGGTTTTGTACATATCTAATCTGTTCTCTTTT  
GGTTGTTGACAACTGGATTTTTTTTTTTTCTTAAAGCAGTGCTTAATTTGTGTTTTTTAATTTTGTAG  
AAGTAGTCCCAGCTCATAGGTGTTTACTGTTACATCCAGAACATTTGTCAGGCTCTCTGTCAGCTTTC  
ATGTACATATGGTATAGAAACCATGGAGTTAGGCACTTCTGATTTTTTTTTTATGAGAAAAATACTGT  
ATTTAAATGTAAATAAACTTTTAAAGAGCAGGCACTAATATATATTTCTTCCAGCCTTGATTACAAA  
TTTGTCTTGCACATGTTAAGATGAATTATCTCTTAAATATCATGTTCTTGGGAGCAGTGTATGTTA  
CTTTACATAGCAGCGTTCTGTGTCATGTTTCAATGTCAGAGTATTTTTGGTTTTTAACTTTCTTATTGCC  
TTTGGCTGTTGATTAGTACAGTACAAGTGCAGTTTCAAAAAGATCTTGAAAGTAATATATTTAATCAATT  
AAATGTTTTATCTGTAAAAA

Human GOCAP1 mRNA sequence - var5 (public gi: 24496472) (SEQ ID NO: 65)  
CCGCTGAGGAGGTGCAGCAGCCGAGATGGCGCGGTGCTGAACGAGAGCGACTCGAGGTGTCCGTGCA  
CGGCTCAGCCTCAGCCCGACCCGAGGAGCGGCTGGGGCGGAGGGCGCCCCGCTGCTGCCGCCACCG  
CTGCCACCGCCCTCGCCACCTGGATCCGTCGCGGCCGCGGCTCAGGGGAGCAGCCGAGCCGCGGG  
AGGCGGCGGCTGGGGCGCGGCGGAGGAGCGCGGCTGGAGCAGCGCTGGGGTTTCGGCCTGGAGGA  
GTTGTACGGCCTGGCACTGCGCTCTTCAAAGAAAAGATGGCAAAGCATTTTCATCCAATCTATGAAGAA  
AAATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGGCCATATAATCCAGACACTTGTCTGAGG  
TTGATTCTTTGATGTGTTGGGAATGACAGGAGGAGAAATGGGCAGCCCTGGGAAACATGTCTAAAGA  
GGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTTGCCATCTCTTTCAACATATGTTGCTGCC  
CACAAAATAGAGAAGGAAGAGCAAGACAAAAAAGGAAGGAGGAAGAGGAGCGAAGCGCGGCTGAAGAG  
AAGAAAGAGAGCGTCTGCAAAAGGAGGAAGAGAAACGTAGGAGAGAAGAAGAGGAAGGCTTCGACGGGA  
GGAAGAGGAAGGATACGGATAGAAGAAGAAAGGCTTCGGTTGGAGCAGCAAAAGCAGCAGATAATGGCA  
GCTTTAACTCCCAGACTGCCGTGCAGTTCCAGCAGTATGCAGCCCAACGGTATCCAGGGAACACGAAAC

Figure 36 part - 35

Human GOCAP1 mRNA sequence - var6 (public gi: 28374435) (SEQ ID NO: 66)

TCCGTCCTCCCGCTGAGGAGGTGCAGCAGCGGGAGATGGCGGCGTGCTGAACGCAGAGCGACTCGAGGTGT  
CCGTCGACGGCCTCACGCTCAGCCCGGACCCGGAGGAGCGGCCTGGGGCGGAGGGCGCCCCGCTGCTGCC  
GCCACCGCTGCCACCGCCCTCGCCACCTGGATCCGGTCGCGGCCCGGGCGCCTCAGGGGAGCAGCCGGA  
CCCGGGGAGGCGGCGGCTGGGGCGCGGGAGGAGGCGGCGGCTGGAGCAGCGCTGGGGTTTCGGCC  
TGGAGGAGTTGTACGGCCTGGGCACTGCGCTTCTTCAAAGAAAAAGATGGCAAGCATTTTCACCACTTA  
TGAAGAAAAATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGGCCCATATAATCCAGACACTTGT  
CCTGAGGTTGGATTCTTTGATGTGTTGGGAATGACAGGAGGAGAGAATGGGCAGCCCTGGGAAACATGT  
CTAAAGAGGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTTGCCATCTCTTTTCAACATATGT  
TGCGTCCCAAAAATAGAGAAGGAAGAGCAAGAAAAAAAAGGAAGGAGGAAGAGGAGCGAAGGCGCGCT  
GACGAGGAAGAAAGAACGCTCTGCAAAAGAGGAGGAAGAACGCTAGGAGAGGAAGAGGAAAGGCTTC  
GACGGGAGGAAGAGGAAAGGAGACGGATAGAAGAAGAAAGGCTTCGGTTGGAGCAGCAAAAGCAGCAGAT  
AATGGCAGCTTTAAACTCCCAGACTGCCGTGCAGTTCCAGCAGTATGCAGCCCAACAGTATCCAGGGAAC  
TACGAAGCCAGCAGCAAATTCATCCGCCAGTTGCAGGAGCAACACTATCAGCAGTACATGCAGCAGTTGT  
ATCAAGTCCAGCTTGCACAGCAACAGGCAGCATATCAGAAACAACAGGAAGTAGTAGTAGTGGCTCTTC  
CTTGCTACATCATCAAAAGTGTAATGCAACTGTACCAAGTAAATATGATGTAGTTAATGGACAGGCCAA  
ACACACACTGACAGCTCCGAAAAAGAACTGGAACCGGAAGCTGCAGAAGAAGCCCTGGAGAAATGGACCAA  
AGAATCTCTTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTCAGATCAAAGACTTCAAAGAGAA  
GATTTCAGCAGGATGCAGATTCGCTGATTACAGTGGGCCGAGGAGAAGTGGTCACTGTTTCAGTACCCACC  
CATGAAGAAGGATCATATCTCTTTGGGAATTTGCCACGACACAATATGACATTTGGGTTTGGGGTGTATT  
TTGAATGGACAGACTCTCCAACACTGTGTGCAGCTGCATGTCACTGAGTCCAGCGATGACGACGAGGA  
GGAAGAAGAAAAACATCGGTTGTGAAGAGAAAGCCAAAAAGAATGCCAACAGCCCTTTGCTGCTAGAT

81/202

GTGCGCTGTGTACCGACGGGACTGT CATGAGGAGGTGTATGCTGGCAGCCATCAATATCCAGGGAGAGGAGTCTATCTCTCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAAATCAGTCTACTACAGAGTCTATTATCTAGATAAAAAATGTTGTTACAAAGTCTGGAGTCTAGGGTTGGGCAGAAGATGACATTTAATTTGGAAATTTCTTTTACTTTTGTGGAGCATTTAGAGTCACAGTTTACCTTATGATATTGGTCTGATGGTTTGCTGAACCTCTGTCTGGGAATCAAAATTTCTTTAGACTCTTTAGCATTCATACTTTGGGGTTAAAGGAGATTCTCTAGACTCATCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGTGGATGCTGAAGTTACATGAGCTACATGTAAATATTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTACCCGGCTGATGGTTAGCCCCCTGCTGCCTGCTCCATGTGTCTTATGAGAGCCCGTAGTTACAGTGTCTCTAATTTGAAATCCATAAGTTAACAACTCTATATCAGGTGCAGCTGGCTTTGATTAAAGGCCATTTTAAAACTTAAAACTCAACACCTCAGATTATAATAGAAAAAGAAATGGCCCTCAGTTTGTATCTCGTTCAAGATGACCCAGATTGTTTCTGCTTTGGGTGCAGCTGTTTAGTTTCAGAGTTATATTACAGAGAATTATTTTCTGAGATAATCTTAACTAGAAATGTTCAAACTAATTGATAATTGAAGTATCAAGATACGTAGAACACCTCAGAGATTTTCTTCAGGAACCTCCACAACTTTGAATCCTTGTATCTTTATTTGGTATTCATACTACTAGTAGCAAAATACAGGTTTTTGTGTTTTGTTTTGTTTTGGCTTCATAGAGTATCTCAAATTGAACTTTCTGCACAAAGATAAAAATTAAGGATTTTATAAACTCAAATTGGCACCCTAGTAATTAATAATACATAAAATCAATTTAAATATAATTCAGCATATGGGAAGTAACATTGCACATAATATGGAATCACTGCCAGAGACAGTCTATTTTCTTTTAATTTGTTACTACTTAGTCAAAACCCACATATTCCAGTTTGGAAATTACTTTATTAAGGAGAATTGGAATACATATGCCATGCTTAATTTTATAGCTTTAATTTGTGTTATTTCTTTATTGACGGGAAGAGGTACATCTTTTTTCTTACTGAAACAAAATATGGATTAATTTGCCCTCAAATTTGTTATAAGTAGATGGCTAGTGATTTCTGTTTTCAGAGGGGAGTGGGTATAGATAGAAAATGACAAAAGATGGCAATATACACTTAATGTTGTTATTGTATGTTGTTACTGAA GTACTTAGATTTTTTAAAATTTCAAATCCTAAATCACTTCTTGTAGGAGGGTTTTTCATTAAGTGCAGTATATACAGTTCACTACATATGGGTGTTTGTAGTTTTTGTGTGCTGTATTTCTTCTGTTTTTAAATACCTGTTTTGTACATATCTAACTCTGTTCTCTTTTGGTTGTTTCAGAACTGGATTTTTTTTCTTAAGCAGTGCTTAATTTGTGTTTTTAAATTTTGAATTCAGAAGTAGTCCAGCTACAGGTGTTTCATCTGTTTACATCCAGACATTTGTGAGGCTCTCTGTGAGCTTTCATGTACATATGGTATAGAAACCATGGAGTTAGGCACTTCCTGATTTTTTTTTTTATGAGAAAAATACTGTATTTAAATGTAAAAATAAACTTTTAAAAAGCAGGCACTAATATATATTTCTTCAGCCCTTTGATTACAAATTTGTCTGTGCATGTTAAGATGAATTATCTCTTAAAAATATCATATTGTTCTTTGGGAGCAGTGATGTTACTTTACATAGCAGCGGTTCTGTCTCATGTGTTTCATGTGCAGAA TATTTTGGTTTTTAAACTCTTATTGGCTTTTGCTGTGTTGATTAGTACAGTACAGTACAGTGCAGATTTCAAAA GATCTTGAAAGTAATATTTAATCAATTAATAAGTTTATCTGTCAAAAAAAAAAAAAAAAAA

[illegible]

Figure 36 part - 37



## Human GOCAP1 mRNA sequence - var8 (public gi: 2738926) (SEQ ID NO: 68)

GAATTCGTTGCTGTCGGAGCCCGTAGTTACAGTGTCTCTAATTTGAAATCCATAAGTTACCAAGTCTA  
TATCAGGTACAGCTGGCTTTCATTAAAGGCCATTTTTAAAACTTCAAAAACCTCAACACCTCACAGATTAT  
AATAGAAAAAGAAATGGCCTCAGTTTGATCTCGTTTCAAGATGACCCAGATTGTTTTCTGCTTTGGGTGCA  
GCTGTTTAGTTTACAGATTATATTACAGAGAATATTTTCTGAGAAATCTTAAACTAGAAATGTTCAAAAC  
TAATTCGATAAATTGAAGTATCAAGATACGTAGAACACCTCAGAGATTTTTCTTCAGGAACCTCCACAAC  
TTTGAATCCTTGTATCTTTATTTGGTATTCATACTACTAGTCGCAAAATACAGGTTTTTTGTTTTGTTT  
TGTTTTGTTTTGGCTTCATAGAGTATCTCAAATTGAAACTTTTTCTGCCCAAAGAATAAAATTAAGGATTT  
TATAAACTCAAATTGGCACCCTACTGAATTAATAATACATAAAATGCATTAAATATAATTACAGCATATGGC  
AGTAACATTGCACTAATATGGAATCACTGCCAGAGACAGTCTATTTCTTTAATTTGTTACTACTTAG  
TCACAACCCACATTATCCAGTTTGGAATTACTTATTAAGGAGAATTGGAATAACATATGCCCATGCTT  
AAATTTTATAGCTTTAATTTGTGTTATTTCTTTATTGACGGGAAGAGGTACATCTTTTTTCTTACTCA  
AAACAAATATGGATTAATTGCCTCAAATTTGTATAAGTGATTGGCTAGTGATTCTTGTTTTCAGAGGGAG  
AGTGGTATAGATAGAAAATGACAAAGATGGCAATATACACTTAATGTTGTTATTGTATGTTGTTACTGAA  
GTACTTAGATTTTTAAATTTCAAATCCTAAATCACTTCTGTAGGAGGGTTTTTCACTAACTGCAGATAT  
ACAGTTCACTACATATGGGTTGTTTGAGTTTTTTGTGTGCTGTATTCTTTCTGTTTTTTAATACTGGT  
TTTGACATATCTAACTCTGTTCTCTTTTGGTTGTTTCAGAACTGGATTTTTTTTTTCTTAAGCAGTGCT  
TAATTTGTGTTTTTTAATTTTGATTGAGAGTAGTCCAGCTCATAGGTGTTTCACTGTTACATCCAGA  
ACATTTGTGAGGCTCTCTGTGAGCTTTTATGTACATATGGTATAGAAACCATGGAGTTAGGCACTTCCTG  
GATTTTTTTTTTATGAGAAAAATACTGTATTTAAATGTAAATAAACTTTTAAAAAGC

## Human GOCAP1 Protein sequence - var1 (public gi: 24496473) (SEQ ID NO: 240)

MAAVLNAERLEVSVDGLTSPDPEERPGAEGAPLLPPPLPPSPPGSGRGPASGEQPEPGEAAAGGAAE  
EARRLEQRWGFGLLELYGLALRLFKEKDGKAFHPTYEELKLKLVALHKQVLMGPYNPDTCPVGGFFDVLGN  
DRRREWAALGNMSKEDAMVEFVKLLNRCCHLFSTYVASHKIEKEEQDKKRKEEEERRRREERERLQKE  
EEKRRREERERLRREERERIRIEERLRLEQQKQQIMAAALNSQTAVQFQQYAAQRYPGNYEQQILIRQL  
QEQQHYQQYMQQLYQVQLAQQAALQKQEVVAGSSSLPTSSKVNATVPSNMMPVNGQAKTHDTSSEKELE  
PEAAEEALENGPKESLPVIAAPSMWTRPQIKDFQREDSAGCRFRDYSGRGEVTVRVPTHEEGSYLFWEF  
ATDNCIDIGFGVYFEWTDSPNTAVSVHVSESSDDDEEEENIGCEEKAKKNANKPLLDEIVPVYRRDCHEE  
VYAGSHQYPGRGVYLLKFDNSYSLWRSKSVYYRVYYTR

## Human GOCAP1 Protein sequence - var2 (public gi: 21961497) (SEQ ID NO: 241)

RTRGCHLFSTYVASHKIEKEEQEKRRKEEEERRRREERERLQKEEEKRRREERERLRREERERRIIE  
ERLRLEQQKQIMAAALNSQTAVQFQQYAAQRYPGNYEQQILIRQLQEQQHYQQYMQQLYQVQLAQQAAL  
QKQEVVAGSSSLPTSSKVNATVPSNMMSVNGQAKTHDTSSEKELEPEAAEEALENGPKESLPVIAAPSM  
WTRPQIKDFKEKIQDADSVITVGRGEVTVRVPTHEEGSYLFWEFATDNYDIGFGVYFEWTDSPNTAVS  
VHVSESSDDDEEEENIGCEEKAKKNANKPLLDEIVPVYRRDCHEEVYAGSHQYPGRGVYLLKFDNSYSL  
WRSKSVYYRVYYTR

## Human GOCAP1 Protein sequence - var3 (public gi: 15799259) (SEQ ID NO: 242)

MAAVLNAERLEVSVDGLTSPDPEERPGAEGAPLLPPPLPPSPPGSGRGPASGEQPEPGEAAAGGAAE  
EARRLEQRWGFGLLELYGLALRFFKEKDGKAFHPTYEELKLKLVALHKQVLMGPYNPDTCPVGGFFDVLGN  
DRRREWAALGNMSKEDAMVEFVKLLNRCCHLFSTYVASHKIEKEEQEKKRKEEEERRRREERERLQKE  
EEKRRREERERLRREERERRIIEERLRLEQQKQQIMAAALNSQTAVQFQQYAAQRYPGNYEQQILIRQL  
QEQQHYQQYMQQLYQVQLAQQAALQKQEVVAGSSSLPTSSKVNATVPSNMMSVNGQAKTHDTSSEKELE  
PEAAEEALENGPKESLPVIAAPSMWTRPQIKDFKEKIQDADSVITVGRGEVTVRVPTHEEGSYLFWEF  
ATDNYDIGFGVYFEWTDSPNTAVSVHVSESSDDDEEEENIGCEEKAKKNANKPLLDEIVPVYRRDCHEE  
VYAGSHQYPGRGVYLLKFDNSYSLWRSKSVYYRVYYTR

## Human GOCAP1 Protein sequence - var4 (public gi: 10438061) (SEQ ID NO: 243)

MAAVLNAERLEVSVDGLTSPDPEERPGAEGAPLLPPPLPPSPPGSGRGPASGEQPEPGEAAAGGAAE  
EARRLEQRWGFGLLELYGLALRFFKEKDGKAFHPTYEELKLKLVALHKQVLMGPYNPDTCPVGGFFDVLGN  
DRRREWAALGNMSKEDAMVEFVKLLNRCCHLFSTYVASHKIEKEEQDKKRKEEEERRRREERERLQKE  
EEKRRREERERLRREERERRIIEERLRLEQQKQQIMAAALNSQTAVQFQQYAAQRYPGNYEQQILIRQL  
QEQQHYQQYMQQLYQVQLAQQAALQKQEVVAGSSSLPTSSKVNATVPSNMMSVNGQAKTHDTSSEKELE  
PEAAEEALENGPKESLPVIAAPSMWTRPQIKDFKEKIQDADSVITVGRGEVTVRVPTHEEGSYLFWEF  
ATDNYDIGFGVYFEWTDSPNTAVSVHVSESSDDDEEEENIGCEEKAKKNANKPLLDEIVPVYRRDCHEE  
VYAGSHQYPGRGVYLLKFDNSYSLWRSKSVYYRVYYTR

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Unigene Name: GOSR2 Unigene ID: Hs.432552

Human GOSR2 mRNA sequence - var1 (public gi: 2316087) (SEQ ID NO: 69)

ATGGATCCCCTGTTCCAGCAAACGCACAAGCAGGTCCACGAGATCCAGTCTTGCATGGGACGCCTGGAGA  
CGGCAGACAAGCAGTCTGTGCACATAGTAGAAAACGAAATCCAAGCAAGCATAGACCAGATATTCAGCCG  
TCTAGAACGTCTGGAGATTTTGTCCAGCAAGGAGCCCCCTAACAAAAGGCAAAATGCCAGACTTCGGGTT  
GACCAAGTTAAAGTATGATGTCCAGCACCTGCAGACTGCGCTCAGAAACTTCCAGCATCGGCGCCATGCAA  
GGGAGCAGCAGGAGAGACAGCGAGAAGAGCTTCTGTGTCGAACGTTCACTACTAACGGCTCTGACACCAC  
CATACCAATGGACGAATCACTGCAGTTTAACTCCTCCCTCCAGAAAGTTCACAACGGCATGGATGACCTC  
ATTTTAGATGGGCACAATATTTAGATGGACTGAGACCCAGAGACTGACCTTGAAGGGGACTCAGAAGA  
AGATCCCTGACATTGCCAACATGCTGGGCTTGTCCAACACAGTGATGCGGCTCATCGAGAAGCGGGCTTT  
CCAGGACAAGTACTTTATGATAGGTGGGATGCTGCTGACCTGTGTGGTCATGTTCTCGTGGTGACGTAC

Human GOSR2 mRNA sequence - var2 (public gi: 3483524) (SEQ ID NO: 70)

TTTTTTTTTTCAGGACAGATTGGCCTTTATACTAAATTCACAATATACCTGGTATTAGTACAGCCTGAA  
TCCGGGGCTGGTCACAGAAGGAAAAAGGTTGTAGTCCCTGAAAACAGAGTGTACAAAGGACATACACACT  
ACAGATGTCTCCACGGTGGGATCTGCCCACACTGGCTGGGCAAAATGAGGGCCTGGCTGGCAGGTGCTAA  
TATATTTAGGGAAGAGAAGGGAACCAAGAAATTAGAGATACTAAACTAGAGCTGAGACTGTAATTGGA  
AAATCACAATCTTTGCCTACAGCTACTTTCTAAGGGGCAAAAGGCCCAAAAGCCTGGGCGCAGGTGCCA  
AGCCACAGTCTCTGAACCTTAAAAGCCAACCACTCTATTAACAAGTAAAGAAATCAGTGACTAGGGTCA  
AGACTGAACACTCCCGGGGAAATAACACTGGCCTCACTTTAGAAAAGAGAAACACCCAGCTGTAGTGTGGA  
AAATCTTACTTGTATCGGCAATAGCACTACATCTTGTTCCTTAGGTAGCTGCTTCCAGGGAATGGTG  
ACAAGTATTGGCAGTCAGTCATCTACATGTCACTGAGGCACAGGGGAGGGTGGCCAGGAGCACGAGGATG  
TGAATCGACCTACTATTTAATATAATGGCTGTGAGAAAAGGCCCTCTTCTTTCTTTCCACTTTTGCTC  
CACCTATCAGGAG

Human GOSR2 mRNA sequence - var3 (public gi: 21961348) (SEQ ID NO: 71)

GGCCTGCCGGGCGCGGACATGGATCCCCTGTTCCAGCAAACGCACAAGCAGGTCCACGAGATCCAGTCT  
TGCATGGGACGCCTGGAGACGGCAGACAAGCAGTCTGTGCACATAGTAGAAAACGAAATCCAAGCAAGCA  
TAGACCAGATATTCAGCCGTCTAGAACGTCTGGAGATTTTGTCCAGCAAGGAGCCCCCTAACAAAAGGCA  
AAATGCCAGACTTCGGGTTGACCAGTTAAAGTATGATGTCCAGCACCTGCAGACTGCGCTCAGAACTTC  
CAGCATCGGCGCCATGCAAGGGAGCAGCAGGAGAGACAGCGAGAAGAGCTTCTGTCTCGAACCTTCACCA  
CTAACGACTCTGACACCACCATACCAATGGACGAATCACTGCAGTTTAACTCCTCCCTCCAGAAAGTTCA  
CAACGGCATGGATGACCTCATTTTAGATGGGCACAATATTTAGATGGACTGAGGACCCAGAGACTGACC  
TTGAAGGTGGGGTCCCTGCTGGGGGACAGAGAGAAGCCCTCTTGTTTAGCCTCATCCAACAGTTTAGTA  
ACTGTGTTTATATTTTGATTACGTGTCTCAATTTGTGATATTTTGATGACAAGACAGAGCCCTTGAGTT  
TGGGATCCTTTCTGTTGGAGTTGAGTTATTGTGAGCCTGAAAGTACCCAGTTCCCTTTGCCAGTGCTTGAA  
ACAAACCATGAAGTGGCTCTCTTAGGATCCAGGTCTTTTCCATTACTGAACCTTATCATGAAAGTGAG  
TGCTACTACGAGGGGTCCAATCACAGGCTGAGAAATTGTGTTACAGAATCTACTCTTGGAGAATGAAGA  
CGTGGCTGTCTTTTGGTACCTCGCTTTAAGGTGGCTTTCCCTTAGGACCCCTACTGTGGACTGCCTTATA  
ACTAAACCTTTTGTATTTTAGTAAGTGAATCCCACTGTGAGTTAGGGCTGCCTGCTTGTGTCAG  
TAGATTAGAGCTTTAGAACTTCTAGAGCTTCTAAAGCCGCTGCTGGTGATCCCAGCGACTCTTCACTCC  
CTAGCCTTAGGTATTCCTAGAAGCCCTGACCAGTTGGCACTGCTGAGACTCCAGCCCTGGGAGTGGTTT  
ACAGAAACATTACACAGACTCTGATGTCACTGATGTTTCAAGCCTCTGCCCTTTTCTGTATCAACCC  
TGATGGATAAATAGGGCTGGGTTCTGTCTGTTATCAGGGGTGTGGTCCCCTGTGAATGAAGCACTCCAGC  
CACTGAGCTGTGAGAAACAGTCACTCGGAAGTGTGAGCTTTATCTTAGTTTTTGTGGATCATGTTGAGT  
CTGTCACTCCACAGGACTTCAGTACGTTTCTGAACAGTCCCTGCCATCTCTACGGGGAGAGGGTCAGG  
CAAGCTGCAAGTGACACTCACCTCCTGCTGACAGTTGCAGTGTCTCAGATGGCCTGGAAGGGTGGTCTCC  
AGCAGCCTGCTGGGCGCTCCCTTTTATGAGAGCCACCTGCAGTGACCTGAACGTGATACATGTTGATTAG  
TCTGCCCTTTCTTTAGAAAACGTACTCTCTTCTATATCTCAGAAAACAGTAGAGGCCTTTTAGGA  
CCAACTCCATGTCACTGATGAAGAGCCAGTGGGGGTTAGAGCGTCTGTTAAGGCACATGCTAGCTT  
CCCCTCAAGTCTGGCAGCGCTGGGGCATCAGCACACCTCTTGCCACCCACACTGATACCAGAGGGGAAG  
GCTGTGAGGTGGCTGGGGTTGAGACTTGAGGTTTCTAAGTCTCTGACACCTGTGGCTACCTGGTG  
TTTGTCTCTTGATTCCTCCACCTGCCTCACACCTGCCTCCGTCGGGATTTTCCACCTACACCATTCAA  
AAGGAACATAGGAGAGGGCATGAAGGGGCTAGGCTGAAGCACTCTGATGACTGGGGCCAATTTGTGGCTG  
AAATGAATACATTTTGTAAATTTATGGTCATTTCAAGTGATTTAGAAGGTTGATCCTTAGCCTCAT  
CAGTGATGAATAATCTGTGTGTTTCAAGCCAGCAGGACTTTAGCAAGAGTCTGATTGTATTGTCACTA  
TCTCGGGGAAAAAATAACAAATACATTTCTCTGATCTCTGATGGCAATGAAGTTGACTTGTAATAA  
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

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Human GOSR2 mRNA sequence - var4 (public gi: 16905519) (SEQ ID NO: 72)  
GTTCCGAGGAAGCCAGAGCCGGAGCCGTGGCCTGCCGGGCCGGCGACATGGATCCCCTGTTCCAGCAAAC  
GCACAAGCAGGTCCACGAGATCCAGTCTTGTCATGGGACGCCCTGGAGACGGCAGACAAGCAGTCTGTGCAC  
ATAGTAGAAAACGAAATCCAAGCAAGCATAGACCAGATATTCAGCCGTCTAGAACGTCTGGAGATTTTGT  
CCAGCAAGGAGCCCCCTAACAAAAGGCCAAAATGCCAGACTTCGGGTTGACCAGTTAAAGTATGATGTCCA  
GCACCTGCAGACTGCGCTCAGAACTTCCAGCATCGGCGCCATGCAAGGGAGCAGCAGGAGAGACAGCGA  
GAAGAGCTTCTGTCTCGAACCTTCACCACTAACGACTCTGACACCACCATACCAATGGACGAATCACTGC  
AGTTTAACTCCTCCCTCCAGAAAGTTCACAACGGCATGGATGACCTCATTTTAGATGGGCACAATATTTT  
AGATGGACTGAGGACCCAGAGACTGACCTTGAAGGGGACTCAGAAGAAGATCCTTGACATTGCCAACATG  
CTGGGCTTGTTCCAACACAGTGATGCGGCTCATCGAGAAGCGGGCTTCCAGGACAAGTACTTTATGATAG  
GCACCCAAGGATCCTGCCAGACAGCACACTTTGGAGGAAGGTCTGCAGGGAGCAGCTGAGCCATTTGTTT  
TTGAACTCTGGGAGGCAGAAGTCCCGCACCCATCATGCGTGGACTGATAGGACATCTTTTCGTGGTGTG  
CACCAGTGCTTTCACACTTGACAGTGCTTGGCTTTGATGAACCCTCATGCTGCACCTTCAGAGCCAGTC  
CTCTAGTTTGAATAAAAAATTGCAGAGGTGGAIAAAAAAAAAAAAAAAAAAAAA

Human GOSR2 mRNA sequence - var5 (public gi: 12711466) (SEQ ID NO: 73)  
AGCCGGAGCCGTGGCCTGCCGGGCCGGCGACATGGATCCCCTGTTCCAGCAAACGCACAAGCAGGTCCAC  
GAGATCCAGTCTTGTCATGGGACGCCCTGGAGACGGCAGACAAGCAGTCTGTGCACATAGTAGAAAACGAAA  
TCCAAGCAAGCATAGACCAGATATTCAGCCGTCTAGAACGTCTGGAGATTTTGTCCAGCAAGGAGCCCCC  
TAACAAAAGGCCAAAATGCCAGACTTCGGGTTGACCAGTTAAAGTATGATGTCCAGCACCTGCAGACTGCG  
CTCAGAACTTCAGCATCGGCGCCATGCAAGGGAGCAGCAGGAGAGACAGCGAGAAGAGCTTCTGTCTC  
GAACCTTCACCACTAACGACTCTGACACCACCATACCAATGGACGAATCACTGCAGTTTAACTCCTCCCT  
CCAGAAAGTTCACAACGGCATGGATGACCTCATTTTAGATGGGCACAATATTTTAGATGGACTGAGGACC  
CAGAGACTGACCTTGAAGGGGACTCAGAAGAAGATCCTTGACATTGCCAACATGCTGGGCTTGTTCCAACA  
CAGTGATGCGGCTCATCGAGAAGCGGGCTTCCAGGACAAGTACTTTATGATAGGCACCCAAGGATCCTG  
CCAGACAGCACACTTTGGAGGAAGGTCTGCAGGGAGCAGCTGAGCCATTTGTTCTTGAATCTGGGAGGC  
AGAAGTCCCCGCACCCATCATGCGTGGACTGATAGGACATCTTTTCGTGGTGTGCACCACTGCTTTCCAC  
ACTTGACAGTGCTTGGCTTTGATGAACCCTCATGCTGCACCTTCAGAGCCAGTCCTTAGTTTGAATAAA  
AAATTCAGAGGTGGAIAAAAAAAAAAAAAAAAAAAAA

Human GOSR2 mRNA sequence - var6 (public gi: 37805253) (SEQ ID NO: 74)  
CAATAGAGACAAGGTCTTGCTCTGTACCCAGGTTGGAGTACAGTGGCATGATCTTGATTCATAACAAC  
TCTACCTCTTGGGTTCAAGCGATCCTCCACCTCGGTCTTCTGAGTAGCTGGGAATACAGTTATAATTAT  
TCAATATGTTCCCACTGACTGAGGAAAACAAGCATGTGGCCAGTTGTTGCTCAATACTGGTACTTGTC  
AAGATGATCTTCAGATTCTGTGGTGTGGATTTTCATGCACCTTACAACTTCCATACAAGATGAAGAAA  
CTGAGATACAGAGAGGTTAAGCAACCTCCCAAAGTTCTAGGGTTACAGGTGTTAGCCACTGTACCTGGCC  
TCTAAGGTGATTCTGATGTGTGATTTTGGAACTGCTCTCTAGACAGAAAGCTTCTGTCTCAAAGAT  
GATCACATTGGTGTAAAGAGCAAACTTGTAAAGTCCAAAATAAATCTTACTGTTTATATCCTAAAAAA  
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human GOSR2 mRNA sequence - var7 (public gi: 16905521) (SEQ ID NO: 75)  
GTTCCGAGGAAGCCAGAGCCGGAGCCGTGGCCTGCCGGGCCGGCGACATGGATCCCCTGTTCCAGCAAAC  
GCACAAGCAGGTCCACGAGATCCAGTCTTGTCATGGGACGCCCTGGAGACGGCAGACAAGCAGTCTGTGCAC  
ATAGTAGAAAACGAAATCCAAGCAAGCATAGACCAGATATTCAGCCGTCTAGAACGTCTGGAGATTTTGT  
CCAGCAAGGAGCCCCCTAACAAAAGGCCAAAATGCCAGACTTCGGGTTGACCAGTTAAAGTATGATGTCCA  
GCACCTGCAGACTGCGCTCAGAACTTCCAGCATCGGCGCCATGCAAGGGAGCAGCAGGAGAGACAGCGA  
GAAGAGCTTCTGTCTCGAACCTTCACCACTAACGACTCTGACACCACCATACCAATGGACGAATCACTGC  
AGTTTAACTCCTCCCTCCAGAAAGTTCACAACGGCATGGATGACCTCATTTTAGATGGGCACAATATTTT  
AGATGGACTGAGGACCCAGAGACTGACCTTGAAGGGGACTCAGAAGAAGATCCTTGACATTGCCAACATG  
CTGGGCTTGTTCCAACACAGTGATGCGGCTCATCGAGAAGCGGGCTTCCAGGACAAGTACTTTATGATAG  
GTGGGATGCTGCTGACCTGTGTGGTTCATGTTCTCGTGGTGCAGTACCTGACATGAGCCAGCCAGCTCA  
GTGGCTGAACAGCATTCCACAGCCTGCAAGTGTGTGTGTGTGTGAAAGAGAGAGGGGGGCCAGAGGCC  
GCCTTTTGAATGTTTGCCTGTCTGAATGTGAAGACACTTGGGAGTGATTGTGGTCTAATTTCCAAAAA  
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human GOSR2 protein sequence - var1 (public gi: 16307241) (SEQ ID NO: 244)  
MDPLFQQTHKQVHEIQSCMRLETADKQSVHIVENEIQASIDQIFSRLEILSSKEPPNKRQNRRLRV  
DQLKYDVQHLQALRNFOHRRHAREQOERQREELLSTFTTNDSDTTIPMDESQFNSSLQKVHNGMDDL  
ILDGHNILDLRLTQRLTLKGTQKKILDIANMLGLSNTVMRLIEKRAFQDKYFMIGGMLLTCVVMFLVVQY  
LT

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Human GOSR2 protein sequence - var2 (public gi: 16905522) (SEQ ID NO: 245)  
MDPLFQQTHKQVHEIQSCMRLETADKQSVHIVENEQASIDQIFSRLEILSSKEPPNKRQNRARLRV  
DQLKYDVQHLQTLARNFQHRHAREQQERQREELLSRTFTTNDSDTTIPMDESLOFNSSLQKVHNGMDDL  
ILDGHNILDGLRTQRLTLKGTQKKILDIANMLGLSNTVMRLIEKRAFQDKYFMIGGMLLTCVVMFLVVQY  
LT

Human GOSR2 protein sequence - var3 (public gi: 12711467) (SEQ ID NO: 246)  
MDPLFQQTHKQVHEIQSCMRLETADKQSVHIVENEQASIDQIFSRLEILSSKEPPNKRQNRARLRV  
DQLKYDVQHLQTLARNFQHRHAREQQERQREELLSRTFTTNDSDTTIPMDESLOFNSSLQKVHNGMDDL  
ILDGHNILDGLRTQRLTLKGTQKKILDIANMLGLSNTVMRLIEKRAFQDKYFMIGTQGSQTAHFGGRSA  
GSS

Human GOSR2 protein sequence - var4 (public gi: 21961349) (SEQ ID NO: 247)  
MDPLFQQTHKQVHEIQSCMRLETADKQSVHIVENEQASIDQIFSRLEILSSKEPPNKRQNRARLRV  
DQLKYDVQHLQTLARNFQHRHAREQQERQREELLSRTFTTNDSDTTIPMDESLOFNSSLQKVHNGMDDL  
ILDGHNILDGLRTQRLTLKVGSLLDREKASCFSLIQQFSNCVYILITCPQIVIF

Human GOSR2 protein sequence - var5 (public gi: 2316088) (SEQ ID NO: 248)  
MDPLFQQTHKQVHEIQSCMRLETADKQSVHIVENEQASIDQIFSRLEILSSKEPPNKRQNRARLRV  
DQLKYDVQHLQTLARNFQHRHAREQQERQREELLSRTFTTNDSDTTIPMDESLOFNSSLQKVHNGMDDL  
ILDGHNILDGLRTQRLTLKGTQKKIPDIANMLGLSNTVMRLIEKRAFQDKYFMIGGMLLTCVVMFLVVQY  
LT

Human GOSR2 pray sequence - var1 (SEQ ID NO: 76)  
AGCGCCGCCATGGNAGTACCCATNCGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTC  
CACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCCGGAACCGGAAGGGGGCTGTGAGGACGT  
GTTCCGAGGAAGCCAGACCCGAGCCGTGGCCTGCCGGGCCGCGACATGGATCCCCTGTCCAGCAAAC  
GCACAAGCAGGTCCACGAGATCCAGTCTTGTCATGGGACGCCTGGAGACGGCAGACAAGCAGTCTGTGCAC  
ATAGTAGAAAACGAAATCCAAGCAAGCATAGACCAGATATTACGCCGTCTAGGACGTCTGGAGATTTTGT  
CCAGCAAGGAGCCCCCTAACAAAAGGCAAAATGCCAACTTCGGGTTGACCAGTTAAAGTATGATGTCCA  
GCACCTGCAGACTGCGCTCAGAACTTCCAGCATCGGCGCNATGCAAGGGAGCAGCGGGAGAGACAGCGA  
GAAGANCTTNTGTCTCNAACCTTAACCNNTACCAANTTTGACNCCCCCTTNCATTGACCAAATANTNGN  
NGTTAACNTNCCTCCNCNAAAAAGTTACAAACGGCTTGNNNAACNTANTTTAAAGGGNCCNATTTTTT  
TNAATNGCNTTGGGNNCCAAAACCTTCTTTNGNGGGGGGNCNTTTGGGGGAAAAAAAANGCCC  
TTTTTTTANCCCNNNCAANTTTNAAANACNNGNNNTNTTTTTTNAANCNNGNCCCAAAGAGGGGAN  
TTTTNNNAANAAAAACNCCCCCTNTGGGGGGGCTTNTTTTGGGGNGGANNTTTTTGNNCCANNAAAA  
ACCCNTTTTNTNNGGNGGAAAAAAAAGNNNTNTTTNTA

Human HERPUD1 mRNA sequence - var1 (public gi: 16507801) (SEQ ID NO: 77)  
AGAGACGTGAACGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCTGCTGGCACCTAGGAGCGCA  
GCGGAGCCCCGACACCGCCGCGCCATGGAGTCCGAGACCGAACCAGCCGCTCACGCTCCTGGTG  
AAGAGCCCCAACAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGCTGGAGTGTGGGCCACCTCA  
AGGCCCACCTGAGCCGCTTACCCGAGCGTCCGCTCCAGAGGACCAGAGTTAATTTATCTGGGAA  
GCTGTTGTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGGAAAAACGGCATGTTTTGCATCTGGTG  
TGCAATGTGAAGAGTCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTG  
CTGGTTCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTAAGGCAAAGGGAAGTTCTTCG  
GAACCTTCTTCCCCTGGATGGGAAAAACATCTCAAGGCATCACGTTGGGTGGTTTCCATTTAGACCGAGG  
CCGTTTCAGAACTTCCCAATGATGGTCTCTCCTGACGTTGTAAATCAGGACCCCAACAATACTTAC  
AGGAAGGCACTGATCCTGAACTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGA  
GCAGACCAGCCCCCTCTTTATGAGCACAGCATGGCTTGCTTCAAGACTTCTTTGCCTCTCTTCTCCA  
GAAGCCCCCAGCCATCGCAACTGATGGTGTTTGTGCTGTAGCTTTGGAGGCTTTGACAGGAATGGA  
CTGGATCACCTGACTCCAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGT  
GGATGATGATATGCTTTTGTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATGGTGAACAAA  
AAATGCCCAAGGCTTCTCATGTCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCA  
CTGTACGTAGAAGGCCTTAGGTGTGTCATGTCTATGCTTGAGGAACCTTTCCAAATGTGTGTGTCTGCAT  
GTGTGTTGTACATAGAAGTCATAGATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCTGTGGAATG  
TTTAAATTACACTAAGTGTACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTT  
CTAGGAAAGACTTATGTATAATTGCTTTTTTAAATGCAGTGCTTTACTTTAAACTAAGGGGAACCTTTGCG  
GAGGTGAAAACCTTTGCTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTGAAAAA  
AA  
AA

Figure 36 part - 41

## Human HERPUD1 mRNA sequence - var2 (public gi: 10441910) (SEQ ID NO: 78)

GCTGTGTGGCCAGGCTTTCTCAAACCTCTGAGGGCAAGCGATCCTCCACCTCAGCCTCTGAGTAGC  
 TGGGACTACAGGCATGTGCCACTAGACCTGGCTCTAAAGACATATATGACACACGAAACCATTATTTTT  
 CATTTACAATGTTTATTCACATATATGGTATTAGTATTCTAATGTAGTGATGCACTCTAAATTTGCATT  
 ATATTTCTAGAACATCTGAACAGAGCATAGGAAATTCCTATTTTGCCATTATCAGTTCTAACAAAAAT  
 CTAAAAAGCACTTTATCATTTTATTTCCCTGCACTGTAATTTTTTTAAATGATCAAAAACAGTATCATAC  
 CAAGGCTTACTTATATTGGAATACTATTTTAGAAAGTTGTGGGCTGGGTTGTATTTATAAATCTTGTGG  
 TCAGATGTCTGCAATGAGTAAATTTAGCACCATTATCAGGAAGCTTTCTCACCATGACAACTTCATTGG  
 AAGATTTTAAATGAAAGTGTAGCATACTCTAGGGAAAAAATATGAATATTTTAGCATCTATGTATTGAAA  
 TTATGTTGAATAAATGTCAGACTATTTTTTACATAACGTTGCTTCTGTTTAAATTTTGTACGTTTCAAGG  
 TGGGGGGTAGGAGATGTAAGCCCTTGACAGCAAAATAATTCCTTTTGCTTGATTTCAGACAGTTGCATCA  
 GCTCCTTTGTTCTGTGTTCATGTTACACTTATTTAGGTGGCTGAATCCACAGAGGAGCCTGCTGGTTCTA  
 ATCGGGGACAGTATCCTGAGGATTCTCAAGTGATGGTTTAAAGGCAAAGGGAAGTTCTTCGGAACCTTTC  
 TTCCCTCGGATGGGAAAAACATCTCAAGGCCTGAAGCTGCCAGCAGGCATTCCAAGGCCTGGGTCTGGT  
 TTCTCCGTTTACACACCTTATGGGTGGCTTCAGCTTTCTGTTCCAGCAGATATATGCACGACAGTACT  
 ACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCACCACCAAGTGACAAGAGATACC  
 TGTGGTCTCTGCACCTGCTCCAGCCCCTATTACAACCAGTTTCCAGCTGAAAACCAGCCTGCCAATCAG  
 AATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCACAAGGTGGCC  
 CTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTACAGCAGCTACATTTTC  
 TGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCTCATGGTCATGGGGCCACCGTT  
 GTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACTTCCCAAATGATG  
 GTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCCTGAACTGA  
 AGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCCCTCTTTATGAGC  
 ACAGCATGGCTTGTCTTCAAGACTTTCTTTGCTCTCTTCTTCCAGAAGGCCCCCCAGCCATCGCAAAT  
 GATGGTGGTTTGTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTCCAGCTAGAT  
 TGCTCTCCTGGACATGGCAATGATGAGTTTAAAAAACAGTGTGGATGATGATATGCTTTTGTGAGCA  
 AGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCAAGGCTTCTCATGTCTT  
 TATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAAATAAGCACTGTACGTAGAAGGCCTTAGGTGTT  
 GCATGTCTATGCTTGAGGAACCTTTTCCAATGTGTGTGTCTGCATGTGTGTTTGTACATAGAAGTCATAG  
 ATGCAGAAGTGGTTCTGCTGGTACGATTGATTCTGTTGGAATGTTTAAATTACACTAAGTGACTACTT  
 TTATATAATCAATGAAATTTGCTAGACATGTTTAGCAGGACTTTTCTAGGAAAGACTTATGTATAATTGC  
 TTTTAAATGCAAGTCTTACTTTAACTAAGGGGAACCTTTGCGGAGGTGAAAACCTTTGCTGGGTTTT  
 CTGTTCAATAAAGTTTTACTATGAATGACAAAAAATAAAAAAAAAA

## Human HERPUD1 mRNA sequence - var3 (public gi: 3005722) (SEQ ID NO: 79)

GGCCACCTCAAGGCCACCTGAGCCGCTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTT  
 ATCTGGGAAGCTGTTTGTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGGAAAAACGGCATGTTTT  
 GCATCTGGTGTGCAATGTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACA  
 GAGGAGCCTGCTGGTTCTAATCGGGGACAGTATCCTGAGGATTCTCAAGTGATGGTTAAGGCAAAGGG  
 AAGTTCTTCGGAACCTTTCTTCCCCTGGATGGGAAAAACATCTCAAGGCCTGAAGCTGCCAGCAGGCATT  
 CCAAGGCCTGGGTCTGGTTTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCTCGGTTCCAGCAG  
 ATATATGCACGACAGTACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTGTTCACCAC  
 CAAGTGACAAGAGATACCTGTGGTCTCTGCACCTGCTCCAGCCCCCTATTACAACCAGTTTCCAGCTGA  
 AAACCAGCCTGCCAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGG  
 ATGAATGCACAAGGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCT  
 ATTACAGCAGCTACATTTCTGTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCTCTCAT  
 GGTGATGGGGGCCACCGTTGTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTT  
 CAGAACTTCCCAAATGATGGTCTCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAG  
 GCACTGATCCTGAACTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGAC  
 CAGCCCCCTCTTTATGAGCACAGCATGGCTGTCTTCAAGACTTCTTTGCCTCTCTTCTCCAGAAGGC  
 CCCCCAGCCATCGCAAATGATGGTGTGTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGAT  
 CACCTGACTCCAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGA  
 TGATATGCTTTTGTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGC  
 CCAAGGCTTCTCATGTCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAAATAAGCACTGTAC  
 GTAGAAGGCCTTAGGTGTGCATGTCTATGCTTGAGGAACCTTTCCAAATGTGTGTGTCTGCATGTGTGT  
 TTGTACATAGAAGTCATAGATGCAGAAGTGGTTCTGCTGGTACGATTGATTCTGTTGGAATGTTTAA  
 TTACATAAGTGTATCTTATATATAATCAATGAAATTTGCTAGACATGTTTTCAGCAGGACTTTTCTAGGA  
 AAGACTTATGTATAATTGCTTTTTTAAATGCAAGTCTTACTTTAACTAAGGGGAACCTTTGCGGAGGTG  
 AAAACCTTTGCTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTGAAAAAATAAAAAAAAAA  
 AAAA

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## Human HERPUD1 mRNA sequence - var4 (public gi: 21619176) (SEQ ID NO: 80)

CCACGCGTCCGGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCTGCCTGGCACCTAGGAGCGCAG  
CGGAGCCCCGACACCGCCCGCCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGCTCACGCTCCTGGTGA  
AGAGCCCCAACAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAA  
GGCCCCACCTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATCTGGGAAG  
CTGTTGTTGGATCACCATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGG  
TGTGCAATGTGAAGAGTCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCC  
TGCTGGTTCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTT  
CGGAACCTTTCTCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATTTCAAGGCC  
TGGGTCTCTGGTTTCTCCGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATGC  
ACGACAGTACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTCCACCACCAAGTGCA  
CAAGAGATACCTGTGGTCTCTGCACCTGCTCCAGCCCCATTACACAACAGTTTCCAGCTGAAAACAGC  
CTGCCAATCAGAATGCTGCTCCTCAAGTGGTGTAAATCCTGGAGCCAATCAAAATTTGCGGATGAATGC  
ACAAGGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTACAGCA  
GCTACATTTTCTGTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCTCATGGTCAATGC  
GGGCCACCGTTGTTATGTACCTGCATCAGTTGGGTGGTTTCCATTTAGACCGAGGCCGTTTCAGAACTT  
CCCAATGATGGTCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGAT  
CCTGAAACTGAAGACCCCAACCACTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCCCT  
CCTTTATGAGCACAGCATGGCTTGTCTTCAAGACTTTCTTGGCTCTCTTCTTCCAGAAGGCCCCCCCAGC  
CATCGCAAAGTATGGTGTGTGTGCTGTAGCTTTGGAGGCTTTGACAGGAATGGACTGGATGGTCACTGAC  
TCCAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATGC  
TTTTGTGAGCAAGCAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAATGCCAAGGCTT  
CTCATGTCTTTATCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAGGC  
CTTAGGTGTTGCATGTCTATGCTTGAGGAACCTTTTCAAATGTGTGTGTCTGCATGTGTGTTGTACATA  
GAAGTCATAGATGCAGAAGTGGTTCTGCTGGTACGATTGATTCTGTGGAATGTTTAAATTACATAA  
GTGTACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTTAT  
GTATAATTGCTTTTTTAAATGCAGTGCTTTACTTTAACTAAGGGGAACCTTTGCGGAGGTGAAAACCTTT  
GCTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTGAAAAA

## Human HERPUD1 mRNA sequence - var5 (public gi: 14249882) (SEQ ID NO: 81)

AACGGTCTGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCTGCCTGGCACCTAGGAGCGCAGCGGAGCCC  
CGACACCGCCGCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCAAGCTCCTGGTGAAGAGCCCC  
AACAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAAGGCCACC  
TGAGCCGCGTCTACCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAAGCTGTTGTT  
GGATCACCATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGGTGTGCAAT  
GTGAAGAGTCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTGCTGGTT  
CTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAAGCAAAGGGAAGTTCTTCGGAACCT  
TTCTTCCCTGGATGGGAAAAACATCTCAAGGCCTGAAGCTGCCAGCAGGACTTCAAGGCCTGGGTCTT  
GGTTTCTCCGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATGCACGACAGT  
ACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCACCACCAAGTGCACAAGAGAT  
ACCTGTGGTCTCTGCACCTGCTCCAGCCCCATTACACAACAGTTTCCAGCTGAAAACCAAGCCTGCCAAT  
CAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCACAAGGTG  
GCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTACAGCAGCTACATT  
TTCTGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCTCATGGTCAATGGGGGCCACC  
GTTGTTATGTACCTGCATCAGTTGGGTGGTTCCATTTAGACCGAGGCCGTTTCAGAACTTCCCAAATG  
ATGGTCTCTCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCCTGAAAC  
TGAAGACCCCAACCACTCCCTCCAGACAGGGATGCTACTAGATGGCGAGCAGACCAGCCCCCTCTTTATG  
AGCAGCATGGCTTGTCTTCAAGACTTTCTTGGCTCTCTTCTTCCAGAAGGCCCCCCAGCCATCGCAA  
ACTGATGGTGTGTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTCCAGCTA  
GATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATGCTTTTGTGA  
GCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAATGCCAAGGCTTCTCATGT  
CTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAAATAGCACTGTACGTAGAAGGCCTTAGGT  
GTTGCATGTCTATGCTTGAAGAACTTTTCAAATGTGTGTGTCTGCATGTGTGTTTGTACATAGAAGTCA  
TAGATGCAGAAGTGGTTCTGCTGGTACGATTGATTCTGTGGAATGTTTAAATTACATAAGTGTACT  
ACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTCTAGGAAAGACTTATGTATAAT  
TGCTTTTTTAAATGCAGTGCTTTACTTTAACTAAGGGGAACCTTTGCGGAGGTGAAAACCTTTGCTGGGT  
TTCTGTTCAATAAAGTTTTACTATGAAAAA

## Human HERPUD1 mRNA sequence - var6 (public gi: 12652674) (SEQ ID NO: 82)

GAAGTGTGCTGTCAGAGATTGCGGGCGGCTGAGACGCCGCTGCCTGGCACCTAGGAGCGCAGCGGAGCC  
CCGACACCGCCCGCCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCAAGCTCCTGGTGAAGAGCCC  
CAACCAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAAGGCCACC

CTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAAGCTGTTGT  
TGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGGTGTGCAA  
TGTGAAGAGTCCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTGCTGGT  
TCTAATCGGGGACAGTATCCTGAGGATTCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTTCGGAACC  
TTTCTTCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCAGCAGGCATTCCAAGGCCTGGGTCC  
TGGTTTTCTCCGTTACACACCCCTATGGGTGGCTTACGCTTTCCTGGTTCCAGCAGATATATGCACGACAG  
TACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCACCACCAAGTGCACAAGAGA  
TACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTACAACCAGTTTCCAGCTGAAAACAGCCTGCCAA  
TCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCACAAGGT  
GGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTACAGCAGCTACAT  
TTTCTGTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCTCATGGTCATGGGGGCCAC  
CGTTGTTATGTACCTGCATCAGCTTGGGTGGTTTCCATTAGACCGAGGCGCGTTTCAGAACTTCCCAAAT  
GATGGTCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCCTGAAA  
CTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACAGCCCTCCTTTAT  
GAGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTCCAGAAGGCCCCCAGCCATCGCA  
AACTGATGGTGTGTTGTGCTGATGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTCCAGCT  
AGATTGCCTCTCCTGGACATGGCAATGATGAGTTTAAAAAACAGTGTGGATGATGATATGCTTTTGTG  
AGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAATGCCAAGGCTTCTCATG  
TCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAGGCCTTAGG  
TGTTGCATGTCTATGCTTGAGGAACCTTTCCAAATGTGTGTCTGCATGTGTGTTTGTACATAGAAGTC  
ATAGATGCAGAAGTGGTTCTGCTGGTACGATTGATTCTGTTGGAATGTTTAAATTACACTAAGTGTAC  
TACTTTATATAATCAATGAAATTGCTAGACATGTTTTCAGCAGGACTTTTCTAGGAAAGACTTATGTATAA  
TTGCTTTTAAATGCAGTGCTTTACTTTAACTAAGGGGAACTTTGGCGAGGTGAAAACCTTTGCTGGG  
TTTTCTGTTCAATAAAGTTTACTATGAATGAAAAAAAAAAAAAAAAAAAAA

Human HERPUD1 mRNA sequence - var7 (public gi: 9711684) (SEQ ID NO: 83)  
AGAGACGTGAAGTGTGCTGTCAGAGATTGCGGGCGGCTGAGACGCCGCTGCCTGGCACCTAGGAGCGCA  
GCGGAGCCCCGACACCCCGCCGCGCCGATGGAGTCCGAGACCGAACCCGAGCCCGTACGCTCCTGGTG  
AAGAGCCCCAACAGCGCCACCGCGACTTGAGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCA  
AGGCCCACTGAGCCGCGTCTACCCGAGCGTCCGCGTCCAGAGGACCAAGGTTAATTTATTCTGGGAA  
GCTGTTGTTGGATCACCAATGTCTCAGGGACTTGCTTCAAAGCAGGAAAAACGGCATGTTTTGCATCTG  
GTGTGCAATGTGAAGAGTCCCTCAAATAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGC  
CTGCTGGTTCTAATCGGGACAGTATCCTGAGGATTCTCAAGTGATGGTTTAAAGGCAAAGGGAAGTTCT  
TCGGAACCTTTCTCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCAGCAGGCATTCCAAGGC  
CTGGGTCTGGTTTTCTCCGTTACACACCCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATG  
CACGACAGTACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCACCACCAAGTGC  
ACAAGAGATACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTACAACCAGTTTCCAGCTGAAAACCAG  
CCTGCCAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATG  
CACAAGGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTACAGC  
AGCTACATTTTCTGTTTTCTCAGTATCCTCTACTTCTCCTGAGCAGATTCTCATGGTCTATG  
GGGGCCACCGTTGTTATGTACCTGCATCAGCTTGGGTGGTTTCCATTTAGACCGAGGCGGTTTCAGAACT  
TCCCAAATGATGGTCTCCTCCTGACGTTGTAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGA  
TCCTGAAACTGAAGACCCCAACCCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACAGCCCC  
TCCTTTATGAGCACAGCATGGCTTGTCTTCAAGACTTTCTTGCCTCTCTTCTCCAGAAGGCCCCCAG  
CCATCGCAAACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGA  
CTCCAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATAG  
CTTTTGTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAATGCCAAGGC  
TTCTCATGTCTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAAATAAGCACTGTACGTAGAAG  
GCCTTAGGTGTGTCATGTCTATGCTTGAGGAACCTTTCCAAATGTGTGTGCTGCATGTGTGTTTGTACA  
TAGAAGTCATAGATGCCAGAAGTGGTTCTGCTGGTACGATTGATTCTGTTGGAATGTTTAAATTACACT  
AAGTGTACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTT  
ATGTATAATTGCTTTTTAAATGCAGTGCTTTACTTTAACTAAGGGGAACTTTGGCGAGGTGAAAACCT  
TTGCTGGGTTTTCTGTTCAATAAAGTTTACTATGAATGACCCTG

Human HERPUD1 mRNA sequence - var8 (public gi: 3005718) (SEQ ID NO: 84)  
GACGTGAACGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCTGCCTGGCACCTAGGAGCGCAGCG  
GAGCCCCGACACCGCGCCGCGCATGGAGTCCGAGACCGAACCCGAGCCCGTACGCTCCTGGTGAAG  
AGCCCCAACAGCGCCACCGCGACTTGAGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAAGG  
CCCACCTGAGCCGCGTCTACCCGAGCGTCCGCGTCCAGAGGACCAAGGTTAATTTATTCTGGGAAGCT  
GTTGTTGGATCACCATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGGTG  
TGCAATGTGAAGAGTCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTG  
CTGGTTCTAATCGGGGACAGTATCCTGAGGATTCTCAAGTGATGGTTAAGGCAAAGGGAAGTTCTTCG

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GCCAAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCAC  
AAGGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTTCAGCAGC  
TACATTTTCTGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCTCATGGTCATGGGG  
GCCACCGTTGTTATGTACCTGCATCAGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACTTCC  
CAAATGATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCC  
TGAAACTGAAGACCCCAACCCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCTCC  
TTTATGAGCAAGCATGGCTTGTCTTCAAGACTTCTTTGCTCTCTTCTTCCAGAAGGCCCCCGAGCCA  
TCGCAAACTGATGGTGTGTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTC  
CAGCTAGATTGCCTCTCCTCGACATGGCAATGATGAGTTTAAAAAACAGTGTGGATGATGATATGCTT  
TTGTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAATGCCCAAGGCTTC  
TCATGTCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAAATAAGCACTGTACGTAGAAGGCC  
TTAGGTGTTGCATGTCTATGCTTGAGGAACCTTTCCAAATGTGTGTCTGTCATGTGTGTTGTACATAG  
AAGTCATAGATGCAGAAAGTGGTCTGCTGGTACGATTTGATTCTGTTGGAATGTTTAAATTACACTAAG  
TGTAATACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTTATG  
TATAATTGCTTTTTAAATGCAGTGCTTTACTTTAACTAAGGGGAACCTTTGCGGAGGTGAAAACCTTTG  
CTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTGAAAAAAAAAAAAAAAAAAAAA

Human HERPUD1 Protein sequence - var1 (public gi: 16507802) (SEQ ID NO: 249)  
MESETEPEPVTLVKSPPNRHRDLELSGDRGWSVGHKHAHLSRVYPERPRPEDQRLIYSGKLLLDHQCRLR  
DLLPKKRVHLVHLVNCVSKPMPEINAKVAESTEEPAGSNRGQYPEDSSSDGLRQREVLRLNLSSPGWEN  
ISRHHVGVWFFRPRPVQNFPPDVPVNDPNNNLQEGTDPETEDPNHLPDDRDLVDGEQTSFPMST  
AWLVFKTFFASLLPEGPPAIAN

Human HERPUD1 Protein sequence - var2 (public gi: 10441911) (SEQ ID NO: 250)  
MQYLAATAASGAFVPPPSAQEI PVVSAPAPAPIHNFPAENQPANQNAAPQVVVNPANQNLRMNAQGGP  
IVEEDEINRDWLDWTYSAATFSVFLSILYFYSSLSRFLMVMGATVVMYLHHVGVWFFRPRPVQNFPPD  
PPDVPVNDPNNNLQEGTDPETEDPNHLPDDRDLVDGEQTSFPMSTAWLVFKTFFASLLPEGPPAIAN

Human HERPUD1 Protein sequence - var3 (public gi: 3005723) (SEQ ID NO: 251)  
GHLKAHLSRVYPERPRPEDQRLIYSGKLLLDHQCRLDLLPKKRVHLVHLVNCVSKPMPEINAKVAEST  
EEPAGSNRGQYPEDSSSDGLRQREVLRLNLSSPGWENISRPEAAQAFQGLGPGFSGYTPYGWLQLSWFQQ  
IYARQYYMQYLAATAASGAFVPPPSAQEI PVVSAPAPAPIHNFPAENQPANQNAAPQVVVNPANQNLR  
MNAQGGPIVEEDEINRDWLDWTYSAATFSVFLSILYFYSSLSRFLMVMGATVVMYLHHVGVWFFRPRPV  
QNFPPDVPVNDPNNNLQEGTDPETEDPNHLPDDRDLVDGEQTSFPMSTAWLVFKTFFASLLPEG  
PPAIAN

Human HERPUD1 Protein sequence - var4 (public gi: 7661870) (SEQ ID NO: 252)  
MESETEPEPVTLVKSPPNRHRDLELSGDRGWSVGHKHAHLSRVYPERPRPEDQRLIYSGKLLLDHQCRLR  
DLLPKKRVHLVHLVNCVSKPMPEINAKVAESTEEPAGSNRGQYPEDSSSDGLRQREVLRLNLSSPGWE  
NISRPEAAQAFQGLGPGFSGYTPYGWLQLSWFQQIYARQYYMQYLAATAASGAFVPPPSAQEI PVVSAP  
APAPIHNFPAENQPANQNAAPQVVVNPANQNLRMNAQGGPIVEEDEINRDWLDWTYSAATFSVFLSI  
LYFYSSLSRFLMVMGATVVMYLHHVGVWFFRPRPVQNFPPDVPVNDPNNNLQEGTDPETEDPNHLP  
DDRDLVDGEQTSFPMSTAWLVFKTFFASLLPEGPPAIAN

Unigene Name: HLA-A Unigene ID: Hs.181244 Clone ID: GD\_159

Human HLA-A mRNA sequence - var1 (public gi: 575248) (SEQ ID NO: 87)  
ATGGCCGTCATGGCGCCCCGAACCCTCGTCTGCTACTCTCGGGGGCTCTGGCCCTGACCCAGACCTGGG  
CGGGCTCTCACTCCATGAGGTATTTCTTACATCCGTGTCCCGGCCCCGCGCGGGGAGCCCCGCTTCAT  
CGCAGTGGGCTACGTGGACGACACGCAGTTCGTGCGGTTTCGACAGCGACGCCGCGAGCCAGAGGATGGAG  
CCGCGGGCGCCGTGGATAGAGCAGGAGGTCCCGAGTATTGGGACGGGGAGACACGGAAAGTGAAGGCC  
ACTCACAGACTCACCGAGTGGACCTGGGGACCTGCGCGGCTACTACAACCAGAGCGAGGCCGTTCTCA  
CACCGTCCAGAGGATGTATGGCTGCGACGTGGGGTTCGACTGGCGCTTCTCCGCGGTACACCCAGTAC  
GCCTACGACGGCAAGGATTACATCGCCCTGAAAGAGGACCTGCGCTCTTGACCGCGGCGGACATGGCAG  
CTCAGACCAACAAGCACAAAGTGGGAGGCGGCCCATGTGGCGGAGCAGTTGAGAGCCTACCTGGAGGGCGA  
GTGCGTGGAGTGGCTCCGCAGATACCTGGAGAACGGGAAGGAGACGCTGCAGCGCACGGACGCCCCAAA  
ACGCATATGACTCACACGCTGTCTCTGACCATGAAGCCACCCTGAGGTGCTGGGCCCTGAGCTTCTACC

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CTGCGGAGATCACACTGACCTGGCAGCGGGATGGGGAGGACCAGACCCAGGACACGGAGCTCGTGGAGAC  
CAGGCCTGCAGGGGATGGAACCTTCCAGAAGTGGGCGGCTGTGGTGGTGCCTTCTGGACAGGAGCAGAGA  
TACACCTGCCATGTGCAGCATGAGGGTTTGCCCAAGCCCCCTCACCTGAGATGGGAGCCGTCTTCCCAGC  
CCACCATCCCCATCGTGGGCATCATTGCTGGCCTGGTTCTCTTTGGAGCTGTGATCACTGGAGCTGTGGT  
CGCTGCTGTGATGTGGAGGAGGAAGAGCTCAGATAGAAAAGGAGGGAGCTACTCTCAGGCTGCAAGCAGT  
GACAGTGCCCGAGGGCTCTGATGTGTCTCTCACAGCTTGTAAGTGTGA

Human HLA-A mRNA sequence - var2 (public gi: 187857) (SEQ ID NO: 88)

ATGGCCGTCATGGCGCCCCGAACCCTCGTCCTGCTACTCTCGGGGGCCCTGGCCCTGACCCAGACCTGGG  
CGGGCTCCCACTCCATGAGGTATTTCTACACTTCCGTGTCCCGGCCCGGCCGCGGGGAGCCCCGCTTCAT  
CGCCGTGGGCTACGTGGACGACACGCAGTTCGTGCGGTTTCGACAGCGACGCCGCGAGCCAGAGGATGGAG  
CCGCGGGCGCCGTGGATAGAGCAGGAGGGGCCGAGTATTGGGACCGGAACACACGGAATGTGAAGGCC  
AGTCACAGACTGACCGAGTGGACCTGGGGACCCTGCGCGGCTACTACAACCAGAGCGAGGCCGTTCTCA  
CACCATCCAGATGATGTATGGCTGCGACGTGGGGTCGGACGGGCGCTTCCTCCGCGGGTACCGGCAGGAC  
GCCTACGACGGCAAGGATTACATCGCCCTGAAAGAGGACCTGCGCTCTTGGACCGCGCGGACATGGCAG  
CTCAGACCACCAAGCACAAAGTGGGAGGCGGCCCATGTGGCGGAGCAGTGGAGAGCCTACCTGGAGGGCAC  
GTGCGTGGAGTGGCTCCGCAGATACCTGGAGAACGGGAAGGAGACGCTGCAGCGCACGGACGCCCCAAA  
ACGCATATGACTCACCACGCTGTCTCTGACCATGAAGCCACCCTGAGGTGCTGGGCCCTGAGCTTCTACC  
CTGCGGAGATCACACTGACCTGGCAGCGGGATGGGGAGGACCAGACCCAGGACACGGAGCTCGTGGAGAC  
CAGGCCTGCAGGGGATGGAACCTTCCAGAAGTGGGTGGCTGTGGTGGTGCCTTCTGGACAGGAGCAGAGA  
TACACCTGCCATGTGCAGCATGAGGGTTTGCCCAAGCCCCCTCACCTGAGATGGGAGCCGTCTTCCCAGC  
CCACCATCCCCATCGTGGGCATCATTGCTGGCCTGGTTCTCTTTGGAGCTGTGATCACTGGAGCTGTGGT  
CGCTGCTGTGATGTGGAGGAGGAAGAGCTCAGATAGAAAAGGAGGGAGCTACTCTCAGGCTGCAAGCAGT  
GACAGTGCCCGAGGGCTCTGATGTGTCTCTCACAGCTTGTAAGTGTGA

Human HLA-A protein sequence - var1 (public gi: 575249) (SEQ ID NO: 253)

MAVMAPRTLVLVLLSGALALTQTWAGSHSMRYFFTSVSRPGRGEPRFIAVGIVDDTQFVRFDSDAASQRME  
PRAPWIEQEGPEYWDGETRKVKHSAQTHRVLDLGLRGYYNQSEAGSHTVQRMYGCDVGS DWRFLRGYHQY  
AYDGKDYIALKEDLRSWTAADMAAQTTKHKWEAAHVAEQLRAYLEGECEVWLRRLRYLENGKETLQRTDAPK  
THMTHHAVSDHEATLRCWALSFPAPAEITLTWORDGEDQTQDTEL VETRPAGDGTFFQKWAAVVVP SGQEQR  
YTCHVQHEGLPKPLTLRWEPSQOPTIPVGI IAGLVLF GAVITGAVVAAMWRRKSSDRKGGSYSQAASS  
DSAQGS DVS LTACKV

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Unigene Name: HLA-B Unigene ID: Hs.77961 Clone ID: 3GD\_1122

Human HLA-B mRNA sequence - var1 (public gi: 32188) (SEQ ID NO: 89)

ATGCGGGTCACGGCGCCCCGAACCGTCCTCCTGCTGCTCTCGGGAGCCCTGGCCCTGACCGAGACCTGGG  
CCGGCTCCCACTCCATGAGGTATTTCTACACCGCCATGTCCCGGCCCGGCCGCGGGGAGCCCCGCTTCAT  
CTCAGTGGGCTACGTGGACGACACGCAGTTCGTGAGGTTTCGACAGCGACGCCGCGAGTCCGAGAGAGGAG  
CCGCGGGCGCCGTGGATAGAGCAGGAGGGGCCGGAGTATTGGGACCAGGAGACACAGATCTCCAAGACCA  
ACACACAGACTTACCGAGAGAGCCTGCGGAACCTGCGCGGCTACTACAACCAGAGCGAGGCCGGGTCTCA  
CACCCTCCAGAGGATGTACGGCTGCGACGTGGGGCCGGACGGGCGCCTCCTCCGCGGCATGACCACTCC  
GCCTACGACGGCAAGGATTACATCGCCCTGAACGAGGACCTGAGCTCCTGGACCGCGCGGACACGGCGG  
CTCAGATCAACCCAGCGCAAGTGGGAGGCGGCCCTGAGGCGGAGCAGCTGAGAGCCTACCTGGAGGGCCT  
GTGCGTGGAGTGGCTCCGCAGATACCTGGAGAACGGGAAGGAGACGCTGCAGCGCGCGGACCCCCAAAG  
ACACATGTGACCCACCAACCCATCTCTGACCATGAGGCCACCCCTGAGGTGCTGGGCCCTGGGCTTCTACC  
CTGCGGAGATCACACTGACCTGGCAGCGGGATGGCGAGGACCAAACTCAGGACACCGAGCTTGTGGAGAC  
CAGACCAGCAGGAGATAGAACCTTCCAGAAGTGGGCAGCTGTGGTGGTGCCTTCTGGAGAAGAGCAGAGA  
TACACATGCCATGTACAGCATGAGGGGCTGCCGAAGCCCTCACCCTGAGATGGGAGCCATCTTCCCAGT  
CCACCATCCCCATCGTGGGCATTGTTGCTGGCCTGGCTGTCTTAGCAGTTGTGGTTCATCGGAGCTGTGGT  
CGCTACTGTGATGTGTAGGAGGAAGAGCTCAGGTGGAAAAGGAGGAGCTACTCTCAGGCTGCGTCCAGC  
GACAGTGGCCAGGGCTCTGATGTGTCTCTCACAGCTTGA

Human HLA-B protein sequence - var1 (public gi: 32189) (SEQ ID NO: 254)

MRVTAPRTVLLLLLSGALALTETWAGSHSMRYFYTAMSRPGRGEPRFISVGIVDDTQFVRFDSDAASPREE  
PRAPWIEQEGPEYWDRETQISKNTQTYRESLRNLRGYYNQSEAGSHTLQRMYGCDVGPDRLLRGRHDQS  
AYDGKDYIALNEDLSSWTAADTAAQITQRKWEAAREAEQLRAYLEGLCVELRRYLENGKETLQRADPPK  
THVTHHPISDHEATLRCWALGFYPAEITLTWQRDGEDQTQDELVETRPAGDRFTQKWAAVVPSGEEQR  
YTCHVQHEGLPKPLTLRWEPSQSSTIPIVGIVAGLAVLAVVIGAVVATVMCRRKSSGGKGSYSQAASS  
DSAQGSVDVSLTA

Unigene Name: MSTP028 Unigene ID: Hs.302746 Clone ID: GD\_1119

Human MSTP028 mRNA sequence - var1 (public gi: 14042294) (SEQ ID NO: 90)

CCCCGCTCCGCCCGCGCTGGCGTGAGCTGGGTGTTTCCTGCCTCTCTCAGTCCGGGTTTGGAGACTCC  
TGCGTCTCCGACTTTTCGTGGAAGAGATGTCAGGAGAAAGTGTTGGTGGAGCTCAGCGGTGCCAGCGGCTG  
CTACCCGCAACCACTTCCTTCAAGGGCACGAGCCCCAGCTCCAAATACGTGAAGCTGAATGTGGGTGGAGC  
CCTCTACTATACCACCATGCAGACGCTGACCAAGCAGGACACCATGCTGAAGGCCATGTTTCAGCGGGCGC  
ATGGAAGTGCTCACCGACAGTGAAGGCTGGATCCTCATTGACCGCTGTGGGAAGCACTTTGGTACGATAC  
TCAACTACCTTCGAGACGGGGCGGTGCCTTTACCCGAGAGCCGCGGGAGATCGAGGAGCTGCTAGCAGA  
AGCCAAGTACTACCTAGTCCAAGGCTGGTGGGAAGAGTGCCAGGCGGGCCCTACAAAACAAAGATACTTAT  
GAGCCTTTCTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACAAAACTTATAGCGACTTCAAATA  
AGCCAGCCGTGAAGTTGCTCTACAACAGAAGTAACAACAAATACTCATATACCAGCAATTCTGACGACAA  
TATGTTGAAAAACATTGAACTGTTTGATAAGCTGTCTCTGCGCTTTAACGGAAGGGTCTGTTCAATAAG  
GATGTTATTGGGGATGAAATCTGCTGCTGGTCCTTTTATGGTCAGGGCCGGAAGATTGCTGAAGTCTGTT  
GTACCTCCATCGTCTATGCCACTGAGAAGAAACAGACCAAGGTGGAGTTTCCCGAAGCCCGGATTATGA  
GGAGACCCTGAACATTTTGCTGTATGAGGCCAGGATGGCCGGGGACCTGACAATGCGCTCCTGGAGGCC  
ACAGGCGGGGCGCGGGGCGCTCCCAACCACTGGACGAGGACGAGGAGCGGGAGCGGATCGAGCGCGTGC  
GGAGGATCCACATCAAGCGCCCTGATGACCGGGGCCACCTCCACCACTGAGCAGGCAAGAGACCGAGCCG  
CCCTCCTCTACCGCCCCCACTCCCTGCGGTGCTACACCCAGATCCTGTGCAGGCTGCCGGGCCCCCTCT  
GCTTCCCTTGGAGCCTGGAGATACTTTTGTAACAAGCCAGATGATTATTTTGGTATTGCTTGACAAGGCA  
AATTGATTGCTTGACCCAGGCGTATGACCCCTGTCGTTGAACAAGCTGTGTCTAAGATCTCTACTTTTC  
ATGAGAATCTGAGACTCTTTGGAGCCAGGCTTTCTCGGTTCTCAGAGGAAAAGTATGAATGAGTGTGAAG  
TGTATGTGAGAACTTTTGTGCAATATTTATTTTGTGGGTGTGCGGCTTCTATGTGGGCTTTTGGGT  
GACACTCCCTTAAGGTTTCAGTTTGACAATTCTGAGAGTTGTCTGCACTGGAGGCCACAGAGGTATC  
TGAGCTCCCTGCTTCTATTTTATAATCCTCCAGCCCCAGCAGGTCCACTCCTGTTCTGTGTGTTGG  
CCCGGGCACAATCCCCACTGCTTTGCTAGACGTGCTTTCTGCCATGTGGCTTTGGGCCTAGAGCTTGTG  
ATAATTGCAGCTTGTGGCAGGGGAAATATGGCTGAATGAGCGTCTAAATCGTTGAGACCAGTGCAACTTT  
GGGTGCAAGGCTTTGTTTAGGGATCAAGCCTTTTGCCACCTTGGGCTGGTCTTTGGCCTGTGCTCACTG  
GGACCCCATATGTCTGCGTAGGAGCAGAACTTTCCATGGCAGTAAGTGTCCAGCTCTGTTTCTGGTCTT  
TCCCCAACTCCAGCCCCGTCAGTTGTTCTCCTGATTGACCCGACTCCACTCCAGGAAGGCCATCTGACC

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CTGTGACAGGCATAGCTCATAAACTACCCCTCCCTGGGATCCCGCTCCTCTTCAGCCTCCTTCCCCATGA  
AGCTGGGCTAACTTTCTAAGTCATTTTGCTTAGAAATTCAGTGTGGCCCATACCCCTTTGTCCTCCAGCC  
TGGCATCCAGGCAGGGACACCCTCACACCACCAGCCCCAGGGAGCTTCCCTGCTATAAACACAGACCCCC  
TTGTCTTTGCTCTGATTTTTACACAGTGTAGAGTGGCCAGCAGTGAACAGGTTGAGGATGTGCGGGTAG  
ATAGATAACTTTGGGTCTGGTTGTGTCTGTGTTCAATGTTTCGTTTAAAGGATATGTGTGACTGTGGGTGG  
GGACGTGTGCTTGTGGGGCACAGGTGGCGGCCCTGCTGGAGCCCGGCTGGGGCGCAGCGCCTATGTAGGA  
CGGGTGTCTCAGTGACCTACCTCCAGGCTCCTCTGCACCTGCAAAGGAACAGGAGTGAGTCGTGACTG  
ACAGGGGTGGTTGAGACTAGACTAGGTAGAGTAGTTACCAGGAGATGTGAATGTGCGTCAGGTGATGGAT  
GGGTTTGTCAAGGGAATCGTTACCGTTTTATACCAAAGGTATTAACATGGGCAGCCTTTGACACATGTAT  
TCCAAAAACGAGTTTATATTTTCAAACGGTTTTTACAGCTTAGACTTTGTACTTACTGCCCTGCCTGTGA  
CAGTTGTATGCCTTCATTTTGTATCCAACAGCAAAGTCTACAATAAACTTTAAACAATCATG

Human MSTP028 mRNA sequence - var2 (public gi: 13994352) (SEQ ID NO: 91)

GGAGACTCCTGCGTCCCTCCGACTTTTCATGGAAGAGATGTCAGGAGAAAGTGTGGTGAGCTCAGCGGTGC  
CAGCGGCTGCTACCCGCACCACTTCTTCAAGGGCACGAGCCCCAGCTCCAAATACGTGAAGCTGAATGT  
GGGTGGAGCCCTCTACTATACCACCATGCAGACGCTGACCAAGCAGGACACCATGCTGAAGGCCATGTTT  
AGCGGGCGCATGGAAGTGCTCACCGACAGTGAAGGCTGGATCCTCATTGACCGCTGTGGGAAGCACTTTG  
GTACGATACTCAACTACCTTCGAGACGGGGCGGTGCCTTTACCCGAGAGCCCGCGGGAGATCGAGGAGCT  
GCTAGCAGAAGCCAAAGTACTACCTAGTCCAGGCCCTGGTGGAAAGAGTGCCAGGCGGCCCTACAAAACAA  
GATACTTATGAGCCTTTCTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACAACAACTTATAGCGA  
CTTCAAATAAGCCAGCGTGAAGTTGCTCTACAACAGAAGTAACAACAATACTCATATACCAGCAATTC  
TGACGACAATATGTTGAAAAACATTGAAGTGTGTTGATAAGCTGTCTCTGCGCTTTAACGGAAGGGTCCCTG  
TTCATAAAGGATGTTATTTGGGGATGAAATCTGCTGAGTGGTCCCTTTATGGTCAGGGCCGGAAGATTGCTG  
AAGTCTGTTGTAACCTCATCGTCTATGCCACTGAGCAAGAAACAGACCAAGGTGGAGTTTCCCGAAGCCCG  
GATTATGAGGAGACCCCTGAACATTTTGTCTGATGAGGCCAGGATGGCCGGGGACCTGACAATGCGCTC  
CTGGAGGCCACAGGCGGGGGCGGCGGGGCGCTCCCACCACCTGGACGAGGACGAGGAGCGGGAGCGGATCG  
AGCGCGTGCGGAGGATCCACATCAAGCGCCCTGATGACCGGGCCACCTTCACCAGTGAGCAGGCAAGAG  
ACCGAGCCGGCCTCCTCTCACCGCCCCACTCCCTGCGGTGCTACACCCAGATCCTGTGCAGGCTGCCGG  
GCCCCCTCTGCTTCCCTTGGAGCCTGGAGATACTTTTGTAAAGCAGATGATTATTTTGGTATTGCTT  
GACAAGGCAAATTGATTGTCTTGACCCAGGCGTATGACCCCTGTCGTTGAACAAGCTGTGTCTAAGATCT  
CTACTTTTTCATGAGAATCTGAGACTCTTGGAGCCAGGCTTTCTCGGTTCTCAGAGGAAAAGTATGAATG  
AGTGTGAAGTGTATGTGAGAACTTTGTGTTGCAATATTTATTTTGTGGGTGTGCACTTCTATGTGGGC  
TTTTTGGGTGACACTCCCTTAAGGGTTCAGTTTGACAATTTCTGAGAGTTGTCTGCAGTTGGAGGCCACC  
AGAGGTATCTGAGCTCCCTGCTTCCATTTTATAATCTCCAGCCCCAGCAGGTCCACTCCTGGTTCCCTG  
TGTGTTTGGCCCGGGCACAATCCCCACTGCTTTGCTAGACGTGCTTTCTGCCATGTGGCTTTGGGCTTAG  
AGCTTGTGATAATTGCAGCTTGTGGCAGTGGAATATGGCTGAATGAGCGTCTAAATCGTTGAGACCAG  
TGCAACTTTGGGTGCAAGGCTTTGTTTAGGGATCAAGCCTTTTGCCACCTTGGGCTGGTCTTTGGCCTGG  
TGCTCACTGGGACCCCATATGTCTGCGTAGGAGCAGAACTTTCCATGGCAGTAAGTGTCCAGCTCTGTTT  
CTGGTTCTTTCCCAACTCCAGCCCCGTCCAGTTGTTTCTCTGATTGACCCGACTCCACTCCAGGAAGGC  
CATCTGACCCGTGACAGGCATAGCTCATAAACTACCCCTCCCTGGGATCCCGCTCCTCTTCAGCCTCCT  
TCCCCATGAAGCTGGGCTAACTTTCTAAGTCATTTTGCTTAGAAATTCAGTGTGGCCCATACCCCTTGTCT  
CTCCAGCCTGGCATCCAGGCAGGGACACCCTCACACCACCAGCCCCAGGGAGCTTCCCTGCTATAAACA  
CAGACCCCTTGTCTTTGCCCTCTGATTTTTACACAGTGTAGAGTGGCCAGCAGTGAACAGGTTGAGGATG  
TGCGGGTAGATAGATAACTTTGGGTCTGGTTTGTGTCTGTGTTTGTGTTAAGGGATATGTGTGAC  
TGTGGGTGGGGACGTGTGCTTGTGGGGCACAGGTGGCGGCCCTGCTGGAGCCCGGCTGGGCGCAGCGCC  
TATGTAGGACGGGTGTTCTCAGTGACCTACCTCCAGGCTCCTCTGCACCTGCAAAGGAACAGGAGTGAG  
TCGTGACTGACAGGGGTGGTTGAGACTAGACTAGGTAGAGTAGTTACCAGGAGATGTGAATGTGCGTCAG  
GTGATGGATGGGTTTGTCAAGGGAATCGTTACCGTTTTTATACCAAAGGTATTAACATGGGCAGCCTTTGA  
CACATGTATTCCAAAAACGAGTTTATATTTTCAAACGGTTTTTACAGCTTAGACTTTGTACTTACTGCCC  
TGCCTGTGACAGTTGTATGCCTTCATTTTGTATCCAACAGCAAAGTCTACAATAAACTTTAAACAATC  
ATGAAAAA

Human MSTP028 mRNA sequence - var3 (public gi: 25303941) (SEQ ID NO: 92)

CCGGGTTTGGAGACTCCTGCGTCCCTCCGACTTTTCATGGAAGAGATGTCAGGAGAAAGTGTGGTGAGCTC  
AGCGGTGCCAGCGGCTGCTACCCGCACCACTTCTTCAAGGGCACGAGCCCCAGCTCCAAATACGTGAAG  
CTGAATGTGGGTGGAGCCCTCTACTATACCACCATGCAGACGCTGACCAAGCAGGACACCATGCTGAAGG  
CCATGTTTCAAGCGGGCGCATGGAAGTGCTCACCGACAGTGAAGGCTGGATCCTCATTGACCGCTGTGGGAA  
GCACCTTTGGTACGATACTCAACTACCTTCGAGACGGGGCGGTGCCTTTACCCGAGAGCCCGGGAGATC  
GAGGAGCTGCTAGCAGAAGCCAAGTACTACCTAGTCCAAGGCTGGTGAAGAGTGCCAGGCGGCCCTAC  
AAAACAAAGATACTTATGAGCCTTTCTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACAACAACT  
TATAGCGACTTCAAATAAGCCAGCCGTGAAGTTGCTCTACAACAGAAGTAACAACAATACTCATATACC  
AGCAATTCTGACGACAATATGTTGAAAAACATTGAAGTGTGATAAGCTGTCTCTGCGCTTTAACGGAA

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GGGTCCTGTTTCATAAAGGATGTCATTGGGGATGAAATCTGCTGCTGGTCCTTTTATGGTCAGGGCCGGAA  
GATTGCTGAAGTCTGTTGTACCTCCATCGTCTATGCCACTGAGAAGAAACAGACCAAGGTGGAGTTTCCC  
GAAGCCCGGATTTATGAGGAGACCCTGAACATTTTGCTGTATGAGGCCAGGATGGCCGGGGACCTGACA  
ATGCGCTCCTGGAGGCCACAGGCGGGGCGGGCGGCTCCCACCACCTGGACGAGGACGAGGAGCGGGA  
GCGGATCGAGCGCGTGGCGGAGGATCCACATCAAGCGCCCTGATGACCGGGGCCACCTCCACCAGTGAGCA  
GGCAAGAGACCGAGCCGCCCTCCTCTCACCGCCCCACTCCCTGCCGTGCTACACCAGATCCTGTGCAG  
GCTGCCGGGGCCCTTCTGCTTCCCTTGGAGCCTGGAGATACTTTGTAAACAAGCCAGATGATTATTTTGG  
TATTGCTTGACAAGGCAAATTGATTGTCTTGACCCAGGCGTATGACCCCTGTCGTTGAACAAGCTGTGTC  
TAAGATCTCTACTTTTCATGAGAATCTGAGACTCTTGGAGCCAGGCTTTCTCGGTTCTCAGAGGAAAAG  
TATGAATGAGTGTGAAGTGTATGTGAGAACTTTGTTTGCAATATTTATTTTGTGGGTGTGCACTTCCT  
ATGTGGGCTTTTGGGTGACACTCCCTTAAGGGTTTCAGTTTGACAATTCTGAGAGTTGTCTGCACTTGG  
AGGCCACAGAGGTATCTGAGCTCCCTGCTTCTATTTTCATAATCCTCCAGCCCCAGCAGGTCCACTCCT  
GGTTCTGTGTGTTTGGCCCGGGCACAAATCCCCACTGTTGCTAGACGTGCTTCTGCCATGTGGCTTT  
GGGCTAGAGCTTGTGATAATTGCAGCTTGTGGCAGTGGAAATATGGCTGAATGAGTGTCTAAATCGTT  
GAGACCAGTGCAACTTTGGGTGCAAGGCTTGTGTTAGGGATCAAGCCTTTTGCCACCTTGGGCTGGTCTT  
TGGCCTGGTGTCTACTGGGACCCCATATGTCTGCGTAGGAGCAGAACTTTCCATGGCAGTAAGTGTCCAG  
CTCTGTTTCTGGTTCTTTCCCCAACTCCAGCCCCGTCCAGTTGTTCTCTGATTGACCCGACTCCACTCC  
AGGAAGGCCATCTGACCCCTGTGACAGGCATAGCTCATAAACTACCCCTCCCTGGGATCCCGCTCCTTC  
AGCCTCCTTCCCCATGAAGCTGGGCTAACTTTCTAAGTCATTTTGCTTAGAAATTCAGTGTGGCCCATAC  
CCTTGTCTCTCCAGCCTGGCATCCAGGCAGGGACACCCCTCACACCACAGCCCCAGGGAGCTTCCCTGC  
TATAAACACAGACCCCTTGTCTTGGCTCTGATTTTTACACAGTGTAGAGTGGCCAGCAGTGAACAGGT  
TGAGGATGTGCGGGTAGATAGATAACTTTGGGTCTGGTTTGTGTCTGTGTTTCATGTTTGTAAAGGGATG  
TGTGACTGTGTGACAGTGTGCTTGTGGGCGCAGGTGGCCCTGCTGGAGCCCGCTGGGCGCAGC  
GCCTATGTAGGACGGGTGTTCTCAGTGACCTACCTCCAGGCTCCTCTGCACCTGCAAGGAACAGGAGT  
GAGTCGTGACTGACAGGGGTGGTTGAGACTAGACTAGGTAGAGTAGTTACCAGGAGATGTGAATGTGCGT  
CAGGTGATGGATGGGTTTGTCAAGGGAATCGTTACCGTTTATACCAAAGGTATTAACATGGGCAGCCTT  
TGACACATGTATTCCAAAACGAGTTTATATTTTCAAACGGTTTTTACAGCTTAGACTTTGTACTTACTG  
CCCTGCTGTGACAGTTGTATGCCTTCATTTTGTATCCAAACAGCAAAGTCTACAATAAACTTTAAACA  
ATCATGACTGAATGTCAAATCGTGTATTGGGCAGATGCTTTTTAACTGTCGTGTGAGAACTTTTATA  
TTAGGCCATTTGGATTTTATTAAGTGCTAAGGAAAGAGGGCTTACAAAATGTTTCGTAAATATTTTATAC  
TGTTTAAAGTGTAAACACCAACCTGTCTTTCTTTGGGTGAGCTTTTTTAGAAAGTCAAGTGAATGT  
TGGCCAGGAAAATGGAAGGCCATTGTATAAATTTTTTTTGGAGCGGAGTCTTGCTCTATTGGCCAGGC  
TGGAGTGTAGTGGCACCATCTCCACTTACCACAACCTTGCCCTCCTGGGTTCAAGCGATTCTGCTGCCTC  
AGCCTCCCAGTAGCTGGGATTGCAGGTACCCATCAGCCCATGCCAGCTAATTTTGTATTTTGTATAGA  
GATGGGGTTTACCATGTTGGCCAGGCTGGTCTTGAACCTCTGACCCTGTGATCCGACCACCTTGGCCTC  
CCAAAGTGTGTTGAGTTACAGGTGTGAGTCACCACACCTGGCTGCATAGTGTTTTAAATGTTTGTGTGAAG  
AATGAGTTTGTGGAACAATTTGATTTGCTGTGGCCTCTATGCCTAATGAGCTAGTGTCTTGGCAGCTCT  
CTCTACCCCACTTTGCACTTGTAGTTTGTAGTCTTGTCTCTGGAATATGAACAGGTTTATAAAACAT  
TCCATGGTGAACAATTTCTGTCGGCTGCATTATAGCCATGAGTGAATAGACAGCATTGGCTGGTCCAAGCT  
CTGTTATTGAGTATACAAGGAAGTATTTTCTTATGTTAGCACTAAGGGCAAAAACCAATATTTATAAT  
GTAAGCACTATCCAGGTAAACACTGGCCCAAGATTTGGTAAAGAGATTTTCATTGCAATGTAATACTAC  
AGTTTTTTTACAAATTGGAACAGCTTTGGTGTGTCGTAATCAAGGGTTTTTTTTGTTTGTGTTTCAAAT  
AAGCCATCTGATTGTGGTGTACTGGGGCCCATGTCCAAGACAATTCCTGGCATATTCTGTACCCCTCCCGT  
GGGGCGATCACTGTGTGGGGACCCATTCCCAGTTTAAAGTGTGTCTCTGTACCTTACAACAGCGATTCA  
GGACCCAAGTGTGAACAACACTCAGCCCCGCCCTCTGGAGCGTGTGCTGTCTTTAGGGCTCTACCCAAAGT  
CACTGTAACAGTTAAGTGTGTCATTAACTTTCTGTCTCTTTGCGCCATAAAAAAATGCTCAAAGTTTGA  
GATGTAGCCACTGTATGTTGTACAAACGTTGGCGACATGTAATAAAAGTCATAAAATGCAAAAAA  
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human MSTP028 mRNA sequence - var4 (public gi: 16552440) (SEQ ID NO: 93)  
AGTCCGGGTTTGGAGACTCCTGCGTCTCCGACTTTTCATGGGCCCTGACATGGCAGGTGATATCCAGGA  
CACTGTTGGGTGCCATGGAGTTGGGGAGAGTTGGCCAGAAGAGTTGGATAACCTTGAATTGAATATTGTC  
CATGACTGTGCGGTTGCTTCTGCTGTTGCAAGCTGCCTCCCTTTACTCCCAGTCCCATTACAAAAATAA  
CGCTTGTGTTTTACAGTTATAGTTGTAGTACCCATTCAATATAGAAAATCTGGAAGGCTAGACAATTC  
TTTTTCAGTTTTCAGGGAATAGTTCAAACAAGTTATGTGCTGTGAGTGCCTGCAGCCAAAAGCAGGAGG  
AGCATACCTGTAGTCAAGCAAAGTTGGGTTTATTTCTTGTGTCATTGGGGTGGGGAAGAACTGTGGGAC  
ATCTCAGAGAAGGGCTGTGGGCTTGTGTTGGGTGATTTGAGAGACAGTTTCAGAGAAGTGGGGCTTTGCTC  
TGTGTTGGATGCTGCTGGGAAGCAGGGCTAATCTGTGATTGGGTCTCAGTGATTCTGACTTGAAAGCA  
GGAAGAATGGAAGGAGGCTAACTTCTCATTGGTAAAGCAGCAGCTGTAACCTCTATAGCCAGGATAGG  
GGATCTTTGGTCATTTTGTATTTTGGATAATGTTATGTTTGTCTGTGTCCGGACATGATGACTGAA  
TGGTCTGTTTTTGTCTGTGCGCAAGGGCACAGAGTTGGCCCTGTCTGAGGGTGTGCTGTGTGAAAAACT  
GTTGATGTTCAATGGGAATGGTAGGGCCAGCCGTGGGGGCTACCCAGATTACAGCAAAGATTCTGCCAC  
CCTTGACATTTCCACCTCTACAGTTTACCTGTTTCAATTCAGACATGTTTGTCTGAGTACACATGTGC

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CGGATACCAATCTCACTTTCCAGGCCTGCGTAAATCAGCCACTGTATCCATTTCTTTGAGATGTACAGAG  
AGTCAGCCATGCTATCAGGGAGATGGTAGTGGGATCTTGCTCTTTTGGGCAGCACTAGTCTAGGAGGTCT  
AATTTTGCAATAAAGTTGGTTCCAAAAGTTTCCATGTCTGTTGTTTAGTCTCAGAAACACCTTCTCCCTA  
CAGGAAGTGATAGGAGTGCAGCTGGAATCCCATTCAACTTCATAAAGCTTATTTTCTGTGTATGCAGC  
TGAAAAATGACACTTAGCTAGCTATTGAGTGGTACATGGCAATAAGGAAATGTAAAGAGACCTGGGCAGT  
GCTTTAGGCTGTTTTAGGGTGCAGCCAGGGTGTTCATGTATACAGGTGCTAGGCAGAAAGGAAGTGCTTA  
TAACACAAGAGTTAGGGGCACCTTGTGCTGTCAGGGTTCGACAGGCAGGGTCAGTGTATGAGGCTTTTTG  
GGTGGGTCTTGGGACAAACTAGGGGATGCATGGCCCTCTCTAGGGGTCAATCAATACCCAGCTCTGACC  
AGTTGTTCCCTGCTAGCCAGTTGGCCTCTGATTTTAGGAGAAGCCAGAAGTCCAGATTTTCTGTGAG  
CTCTCCTTAGTTGACCACATTGGAAGCAAACCTTTTAAATGCTGTGTATGCGTGGCCCAAGCAAAACACAT  
CTGGAGGCCAGATTGAATCCACAGGCTGAAAGCAGTCAACCAGGCCTGATGTCATGACCTGTATCCTCT  
CCACTGGCAGGAAGAGATGTCAGGAGAAAGTGTGGTGAAGTTCAGCGGTGCCAGCGGCTGCTACCCGCCACC  
ACTTCTCTCAAGGGCAGGACCCAGCTCCAAATACGTGAAGCTGAATGTGGGTGGAGCCCTTACTATA  
CCACCATGCAGACGCTGACCAAGCAGGACACCATGCTGAAGGCCATGTTAGCGGGCGCATGGAAGTGCT  
CACCGACAGTGAAGGCTGGATCCTCATTGACCGCTGTGGGAAGCACTTTGGTACGATACTCAACTACCTT  
CGAGACGGGGCGGTGCCCTTACCCGAGAGCCGCCGGGAGATCGAGGAGCTGCTAGCAGAAGCCAAAGTACT  
ACCTAGTCCAAGGCCTGGTGGAAAGAGTGCCAGGCGGCCCTACAACAGAACAAAGATACTTATGAGCCTTT  
CTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACAACAACTTATAGCGACTTCAAAATAGGCCAGCC  
GTGAAGTTGCTCTACAACAGAAGTAACAACAAATACTCATATACCAGCAATTCTGACGACAATATGTTGA  
AAAACATTGAAGTGTGATAAGCTGTCTCTGCGCTTTAACGGAAGGGTCTGTTTATAAAGGATGTATCAT  
TGGGGATGAAATCTGCTGCTGGTCTCTTTATGGTCAGGGCCGGAAGATTGCTGAAGTCTGTTGTACCTCC  
ATCGTCTATGCCACTGAGAAGAAACAGACCAAGGTGGAGTTTCCCGAAGCCCGGATTATGAGGAGACCC  
TGAACATTTTGTCTGATGAGGCCAGGATGGCGGGACCTGACAAATGCGCTCTGAGGCGCACAGGCGGG  
GGCGGGCGGGCGCTCCACCACCTGGACGAGGACGAGGAGCGGGAGCGGATCGAGCGCGTGGCGGAGGATC  
CACATCAAGCGCCCTGATGACCGGGCCACCTCCACCAGTGAGCAGGCAAGAGACCGAGCGCCCTCCTC  
TCACCGCCCCACTCCCTGCCGTGCTACACCCAGATCCTGTGCAGGCTGCCGGGCCCCCTTCTGCTTCCCT  
TGGAGCCTGGAGATACTTTTGTAAACAAGCCAGATGATTATTTGGTATTGCTTGACAAGGCAAATGATT  
CTCTTGACCCAGGCGTATGACCCCTGTCTGTTGAACAGCTGTGTCTAAGATCTCTACTTTTCTAGAGAAT  
CTGAGACTCTTTGGAGCCAGGCTTTCTCGGTTCTCAGAGGAAAAGTATGAATGAGTGTGAAGTGTATGTG

Human MSTP028 mRNA sequence - var5 (public gi: 21750697) (SEQ ID NO: 94)

GCTGGCGTGAGCTGGGTGTTTCTGCCTCTCTCAGTCCGGGTTTGGAGACTCCTGCGTCTCCGACTTTT  
CATGGAAGAGATGTCAAGGAGAAAGTGTGGTGAAGTTCAGCGGTGCCAGCGGCTGCTACCCGCACCACTTCC  
TTCAAGGGCAGGACCCAGCTCCAAATACGTGAAGCTGAATGTGGGTGGAGCCCTTACTATACCACCA  
TGACAGCGCTGACCAAGCAGGACACCATGCTGAAGGCCATGTCCAGCGGGCGCATGGAAGTGCCTCACCGA  
CAGTGAAGAACAAGATACTTATGAGCCTTTCTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACA  
AAAACCTTATAGCGACTTCAAAATAGCCAGCGTGAAGTTGCTCTACAACAGAAGTAACAACAAATACTCA  
TATACCAGCGATTCTGACGACAATATGTTGAAAAACATTGAAGTGTGATAAGCTGTCTCTGCGCTTTA  
ACGGAAGGGTCTGTTTATAAAGGATGTTATTTGGGGATGAATCTGCTGCTGGTCCCTTTATGGTCAGGG  
CCGGAAGATTGCTGAAGTCTGTTGTACCTCCATCGTCTATGCCACTGAGAAGAAACAGACCAAGTGGAG  
TTTCCCGAAGCCCGGATTATGAGGAGACCCCTGAACATTTTGTCTGATGAGGCCAGGGTGGCCGGGGAC  
CTGACAATGCGCTCCTGGAGGCCACAGGCGGGGCGGGCGGGCGCTCCACCACCTGGACGAGGACGAGGA  
GCGGGAGCGGATCGAGCGCGTGGCGGAGGATCCACATCAAGCGCCCTGATGACCGGGCCACCTCCACCAG  
TGAGCAGGCAAGAGACCGAGCCGCCCTCCTCTACCGCCCCCACTCCCTGCCGTGCTACACCCAGATCCT  
GTGAGGCTGCCGGGCCCTTCTGCTTCCCTTGGAGCCTGGAGATACTTTTGTAAACAAGCCAGATGATTA  
TTTTGGTATTGCTTGACAAGGCAAATGATTGTCTTGACCCAGGCGTATGACCCCTGTCTGTTGAACAAGC  
TGCTCTAAGATCTCTACTTTTCTAGAGAATCTGAGACTCTTTGGAGCCAGGCTTTCTCGGTTCTCAGAG  
GAAAAGTATGAATGAGTGTGAAGTGTATGTGAGAACTTTTGTGCAATATTTATTTTGTGGGTGTGCA  
CTTCTGTGTGGGCTTTTGGGTGACACTCCCTTAAGGGTTCAGTTTGACAATCTGAGAGTTGTCTGTC  
AGTTGGAGGCCACCAAGAGGTATCTGAGCTCCCTGCTTCCCTATTTTATAATCTCCAGCCCCAGCAGGTCC  
ACTCCTGGTTCCTGTGTGTTTGGCCCGGACACAATCCCCACTGCTTTTGTAGACGTGCTTTCTGCCATGT  
GGCTTTGGGCCTAGAGCTTGTGATAATGCAGCTTGTGGCAGTGGAAATATGGCTGAATGAGCGTCTAA  
ATCGTTGAGACCACTGCAACTTTGGGTGCAAGGCTTTGTTTAGGGATCAAGCCTTTGCCACCTTGGGCT  
GGTCTTTGGCCTGGTGTCTACTGGGACCCCATATGTCTGCGTAGGAGCAGAACTTTCCATGGCAGTAAGT  
GTCCAGCTCTGTTTCTGTTCTTTCCCAACTCCAGCCCCGTCAGTTGTTCTCCTGATTGACCCGACTC  
CACTCCAGGAAGGCCATCTGACCTGTGACAGGCATAGCTCATAAACTACCCCTCCCTGGGATCCCGCTC  
CTCTTCAGCCTCCTTCCCCATGAAGCTGGGCTAACTTTCTAAGTCAATTTTGTCTAGAAATTCAGTGTGGC  
CCATACCTTTTGTCTCCAGCCTGGCATCCAGGCAGGGACACCTCACACCACCGAGCCCCAGGGAGCTT  
CCCTGCTATAAACACAGACCCCTTGTCTTTGCTCTGATTTTACACAGTGTAGAGTGGCCAGCAGTGA  
ACAGTTGAGGATGTGCGGGTAGATAGATAAATTTGGGTCTGGTTTGTGTCTGTGTTTGTGTTTAA  
GGGATATGTGTGACTGTGGGTGGGACGTGTGCTTGGGGCACAGGTGGCGGCCCTGCTGGAGCCTGG  
CTGGGCGCAGCGCTATGTAGGACGGGTGTTCTCAGTGACCTACCTCCAGGCTCCTCTGCACCTGCAAA  
GGAACAGGAGTGAAGTGTGACTGACAGGGGTGGTTGAGACTAGACTAGGTAGAGTAGTTACCAGGAGATG

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TGAATGTGCGTCAGGTGATGGATGGGTTTGTCAAGGGAATCGTTACCGTTTATACCAAAGGTATTAACA  
TGGGCAGCCTTTGACACATGTATTCCAAAAACGAGTTTATATTTTCAAACGGTTTACAGCTTAGACTT  
TGTACTTACTGCCCTGCTGTGACAGTTGTATGCCTTCATTTTGTATCCAACAGCAAAGTCTACAATAAA  
ACTTTAAACAATCATG

Human MSTP028 Protein sequence - var1 (public gi: 13994353) (SEQ ID NO: 255)  
MEEMSGESVSSAVPAAATRTTSFKGTSPSSKYVKLVGGALYYTMMQTLTKQDTMLKAMFSGRMEVLTD  
SEGWILIDRCGKHFGTILNLYLRDGA VPLPESRREIEELLA EAKYLVQGLVEECQAALQNKDTYPEPFCKV  
PVITSSKEEQKLIATSNKPAVKLLYNRSNNKYSYTSNSDDNMLKNIELFDKLSLRFNGRVLFIKDVI GDE  
ICCSWFGQGRKIAEVCCTSI VYATEKKQTKVEFPPEARIEETLNILLYEAQDGRGPDNALLEATGGAAG  
RSHLDEDEERERI ERVRIHIKRPDDRAHLHQ

Human MSTP028 Protein sequence - var2 (public gi: 14042295) (SEQ ID NO: 256)  
MSGESVSSAVPAAATRTTSFKGTSPSSKYVKLVGGALYYTMMQTLTKQDTMLKAMFSGRMEVLTDSEG  
WILIDRCGKHFGTILNLYLRDGA VPLPESRREIEELLA EAKYLVQGLVEECQAALQNKDTYPEPFCKVPVI  
TSSKEEQKLIATSNKPAVKLLYNRSNNKYSYTSNSDDNMLKNIELFDKLSLRFNGRVLFIKDVI GDEICC  
WSFYGQGRKIAEVCCTSI VYATEKKQTKVEFPPEARIEETLNILLYEAQDGRGPDNALLEATGGAAGRSH  
HLDEDEERERI ERVRIHIKRPDDRAHLHQ

Unigene Name: PACS-1 Unigene ID: Hs.58589

Human PACS-1 mRNA sequence - var1 (public gi: 27781345) (SEQ ID NO: 95)  
AGCACGAGTCTGGTTGTGCCGGAGAAAGTCAAACCTCCCATGAAGTCCAGTAAACCGGATCTCCAGGGCT  
CTGCCCTCCCCAGCAAAGTGGAGGGGGTGACACACCCCGGCAGAGAGGAGCAGCCCCCTGAAGGAGCG  
GCAGCTCTCCAAGCCCCTAAGTGAGAGGACCAACAGTTCCGACAGCGAGCGCTCCCCAGATCTCGGGCCAC  
AGCACGCGAGATTCCAAGAAAGGTGGTGTATGACCAGCTCAATCAGATCCTGGTGTGATGCAGCCCTCC  
CAGAAAATGTCAATTCTGGTGAACACCACTGACTGGCAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCA  
GCGGAAGCCTGTGGTGTGCACCTGCTCCACCGTGGAGGTCCAGGCCGTGCTGTCCGCCCTGCTCACCCGG  
ATCCAGCGCTACTGCAACTGCAACTCTTCCATGCCGAGGCCAGTGAAGGTGGCTGCTGTGGGAGGCCAGA  
GCTACCTGAGCTCCATCCTCAGGTTCTTTGTCAAGTCCCTGGCCAACAAGACCTCCGACTGGCTTGGCTA  
CATGCGCTTCTCATCATCCCCCTCGGTTCTCACCTGTGGCCAAATACTTGGGGTCAGTCGACAGTAAA  
TACAGTAGTTCTTCTGGATTCTGGTTGGAGAGATCTGTTTCAGTCGCTCGGAGCCACAGTGTGAGAGC  
AACTGGACGTGGCAGGGCGGGTGATGCAGTACGTCAACGGGGCAGCCACGACACACCAGCTTCCCGTGGC  
CGAAGCCATGCTGACTTGCCGGCATAAGTTCCCTGTGAAGACTCCTATCAGAAAGTTTATTCCTTTCATT  
GGCGTGGTGAAGGTGGGTCTGGTTGAAGACTCTCCCTCCACAGCAGGCGATGGGGACGATTCTCTGTGG  
TCAGCCTTACTGTGCCCTCCACATCACCACTCCAGCTCGGGCCTGAGCCGAGACGCCACGGCCACCCC  
TCCCTCCTCCCCATCTATGAGCAGCGCCCTGGCCATCGTGGGGAGCCCTAATAGCCCATATGGGGACGTG  
ATTGGCTTCCAGGTGGACTACTGGCTGGGGCCACCCCGGGAGCGGAGGAGGGAAGGCGACAAGAGGGACG  
CCAGCTCGAAGAACACCTCAAGAGTGTCTTCCGCTCAGTGCAGGTGTCCCGCCTGCCCATAGTGGGGA  
GGCCAGCTTCTGGCACCATGGCCATGACTGTGGTCAACAAAGAAAAGAACAAAGAAAGTTCCCAACATC  
TTCCTGAGCAAGAAACCCCGAGAAAAGGAGGTGGATTCTAAGAGCCAGGTCAATGAAGGCATCAGCCGCC  
TCATCTGCTCAGCCAAGCAGCAGCAGACTATGCTGAGAGTGTCCATCGATGGGGTCGAGTGGAGTGACAT  
CAAGTTCTTCCAGCTGGCAGCCCACTGGCCCCACCAATGTCAAGCACTTTCAGTGGGACTCTTCAGTGGC  
AGCAAGGCCACCTGAGGCCCTGTCTCCAGCCACTTTCCTCCTGGCACTGCCACCAGCCTCACCGCCTG  
CGGGCAGGGGGAGGCCAGCAGGCCCGGGCCAGCACCCCTTCCCTGGCACCAGGGTCTGCCTCTCACTCG  
CCCAGGTCCCGAAGGACACTGCCACAGGGACGCCTTCCCTCCCTCCCTCCAGCCCACCCCTGCACAGC  
CCCTCCTCCTTCCCGCTTTTCCCTTCTCCCTCCTGCTCCAGGCCAAGGCGTGTGGTTTTGCCTTCTG  
GTGCCCATAGTCCCCTGGACTGAGTCCCCCAGGCCTTCCTTACCCGACTTCCAAACTCTTCTTGTGGT  
ATCAGTTTCTTCTCGGAAATGAGAAAGCTGGAATCCTGGTCCCCAGCAGGAGAGCCTAGTCCCTCCCCA  
GCCCCTCAGCCACCAGGGTGTCTCTAGGATGACGTGCCAGATCCACTCACTCTGCTGCCTCCAGCAG  
GACCCAAGGCCACTTTCAACTCTTATGGGGTTCTCCACCTGCCCCAGAGCTTCTCAAGGGAGGGTAAGGG  
GGCACCTGAGCCACAGGACCCCTACTTCAAGCTCACAGGGGCAGGAGGAGCTCCCCTGCCTCCAGG  
ACCCTGTTGCTATGGTGACACAGCGTTTCTAGGACAGAGGGCCCTCCAGTCTCCCCCACCACCCGTGC  
ACGACTTCTTCAACACCCCAAGTTCCCTGCAGATGTCGTGTGTCTCTGAGTGTCTTCTTGGTTCTTTG  
CAGCGCAAGTCTCTTGGTTGTACCATGTGACACACCTGTGCACTGGTGTGCTCTTCTGTTGGCTTCCACC  
CTTGTATGATGCTCTGCCTCTGCCTCCAGCCCTCAGCCAGCAGCTCTGCTTGGACTTGGAGAG  
ATGGGAGGCAGACCCCAACCCATACATGCTGTCTGTGGCCCTCAGACATTCTGTTTCTATCTCCATT  
CATCTCCTCCTCCACCGTGTCACTTTTTCTGCCTTCCCTGCTCTGTCTTCCCCCTCCTTAGGCCCC  
AGCCTGGGCCAGACCCATCCTCCAGCCAGGTTTCCCTCCAGCAGGCTCCTTCCCTCCTGTACCTCC  
CTCTACCAACCCGGGCTCTGAGCCCTCATTCTGACCGTCCGTGTTCTCAGGAGTGGTTGAGGACACA  
GGGCCCCAGCCCGCCCTCTGCACCCCGCCATCTGCGCCCCACAGCCCTTTGGAGCTTTTTC  
TCTTGTCTCTCACTCCTTCCAGAAAGTTTTTGACAGAACTTCATTTTGAAAGTGTTTTTCTCATCTCTC

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CATACCTCCCCAAGCTCTCCTCCAGCCCTTCCCAGGGCTCAGCCCTGCTGTCTGAGCGTCTCCTGGGC  
CAGAGAGAGGAGATGGGGGTGGGAGGGACTGAGTTGATGTTGGGTTTTTCATTCAATAAATTGGTGATT  
CTTAAAAAAAAAAAAAAAAAAAA

Human PACS-1 mRNA sequence - var2 (public gi: 30962845) (SEQ ID NO: 96)  
CCTCGGCTCCGTAACCCCCGCTAGCCGGGCCATGGCGGAACGCGAGGGGCGGGCGGTGGTCCCGGAG  
GCGCCGGGGCGGCAGCGGCCAGCGGGGATCCGGGGTCCGCCAGTCCCCTCAGCAGCCGCCCGCGCAGCA  
GCAGCAGCAGCAGCCGCCGAGCAGCCGACGCCCCCAAGCTGGCCAGGCCACCTCGTCTGCTCCTGCTCC  
ACCTCGGCGGGCGGTGCCTCCTCCTCGTCTCCTACCTCCACCTCCATGGCCGTGGCGGTGGCCCTCGG  
GCTCCGCGCCTCCCGGTGGCCCGGGGCCAGGCCGACCCCCGCCCCGGTGCAGATGAACCTGTACGCCAC  
CTGGGAGGTGGACCGGAGCTCGTCCAGCTGCGTGCCTAGGCTATTAGCTTGACCCTGAAGAACTCGTC  
ATGCTAAAAGAAATGGACAAAGATCTTAAGTCACTGAGTGTATCGTGTGAAGCTGCAGGGTTCAAAAAGAA  
TTCTTCGCTCCAACGAGATCGTCTTCCAGCTAGTGGACTGGTGGAAACAGAGCTCCAATTACCTTCTC  
CCTTCAGTACCCTCATTTCCTTAAGCGAGATGCCAACAAAGCTGCAGATCATGCTGCAAAGGAGAAAAAGCT  
TACAAGAAATCGGACCCTCTTGGGCTATAAGACCTTGGCCGTGGGACTCATCAACATGGCAGAGGTGATGC  
AGCATCTTAATGAAGGCGCACTGGTGTCTTGGCCTACACAGCAACGTGAAGGATGTCTCTGTGCTGTGGC  
AGAAATAAAGATCTACTCCCTGTCCAGCCAACCCATTGACCATGAAGGAATCAAATCCAAGCTTCTGAT  
CGTTCTCTGATATTGACAATTATTCTGAGGAAGAGGAAGAGAGTTTCTCATCAGAACAGGAAGGCAGTG  
ATGATCCATTGCATGGGCAGGACTTGTCTACGAAGACGAAGATCTCCGAAAGTGAAGAAGACCCGGAG  
GAAACTAACCTCAACCTCTGCCATCACAAGGCAACCTAACATCAAACAGAAGTTTGTGGCCCTCCTGAAG  
CGGTTTAAAGTTTCAGATGAGGTGGGCTTTGGGCTGGAGCATGTGTCCCGCAGCAGATCCGGGAAGTGG  
AAGAGGACTTGGATGAATTGTATGACAGTCTGGAGATGTACAACCCAGCGACAGTGGCCCTGAGATGGA  
GGAGACAGAAAGCATCCTCAGCAGCCCAAAGCCCAAGCTCAAGCCTTTCTTGGAGGGGATGTGCGAGTCC  
AGCTCCAGAGCGGAGATTGGCAGCCTCAACAGCAAAAGGCGAGCCTCGGAAAAGACACCACCAGCCCTATGG  
AATTGGCTGTCTAGAAAAAATTAAATCTACTTGGATTAAAAAACCAAGATGACAGCTTGACTGAAACAGA  
CACTCTGGAATCACTGACCAGGACATGTTTGGAGATGCCAGCAGAGTCTGGTTGTGCCGGAGAAAGTC  
AAAACCTCCCATGAAGTCCAGTAAAACGGATCTCCAGGGCTCTGCCTCCCCCAGCAAAGTGGAGGGGGTGC  
ACACACCCCGGCAGAAAGAGGAGCAGCCCCCTGAAGGAGCGGCAGCTCTCAAGCCCTTAAGTGAGAGGAC  
CAACAGTTCGACAGCGAGCGCTCCCCAGATCTGGGCCACAGCAGCAGATTCCAAGAAAGGTGGTGTAT  
GACCATCTACATCAGATCCTGGTGTGATGCACCCCTCCAGAAAATGTATTCTGGTGAACACCATG  
ACTGGCAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCGGAAGCCTGTGGTGTGCACCTGTCTCCAC  
CGTGGAGGTCCAGGCCGTGTGTCCGCCCTGCTCACCCGGATCCAGCGCTACTGCAACTGCAACTCTTCC  
ATGCCAGGGCCAGTGAAGGTGGCTGTGTGGGAGGCCAGAGCTACCTGAGCTCCATCCTCAGGTTCTTTG  
TCAAGTCCCTGGCCAACAAGACCTCCGACTGGCTTGGCTACATGCGCTTCTCATCATCCCCCTCGGTTT  
TCACCTGTGGCCAAATCTTGGGGTCAGTCGACAGTAAATACAGTAGTTCTTCTGGATTCTCTTGG  
AGAGATCTGTTTCACTCGCTCGGAGCCACAGTGTGCTCAGAGCAACTGGACGTGGCAGGGCGGGTGTGAGT  
ACGTCAACGGGGCAGCCACGACACACCAGCTTCCCGTGGCCGAAGCCATGCTGACTTGCCGGCATAAGTT  
CCCTGATGAAGACTCCTATCAGAAGTTTATTCCCTTCATTGGCGTGGTGAAGGTGGGTCTGGTTGAAGAC  
TCTCCCTCCACAGCAGGCGATGGGGACGATTCTCCTGTGGTCAAGCTTACTGTGCCCTCCACATCACCAC  
CCTCCAGCTCGGGCCTGAGCCGAGACGCGCCACCCCTCCCTCCTCCCATCTATGAGCAGCCGCCCT  
GGCCATCGTGGGGAGCCCTAATAGCCCATATGGGACAGTGAATTGGCCTCCAGGTGGACTACTGGCTGGGC  
CACCCCGGGGAGCGGAGGAGGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAACACCCCTCAAGAGTGTCT  
TCCGCTCAGTGCAGGTGTCCCGCCTGCCCCATAGTGGGGAGGCCAGCTTCTGGCACCATGGCCATGAC  
TGTGGTACCAAAGAAAAGAAACAAGAAAGTTCCACCATCTTCTGAGCAAGAAACCCCGAGAAAAGGAG  
GTGGATTCTAAGAGCCAGGTCAATTGAAGGCATCAGCCGCTCATCTGCTCAGCCAAGCAGCAGCAGACTA  
TGCTGAGAGTGTCCATCGATGGGGTGGAGTGGAGTGACATCAAGTTCTTCCAGCTGGCAGCCAGTGGCC  
CACCCATGTCAAGCACTTTCAGTGGGACTTTCAGTGGCAGCAAGGCCACCTGAGGCCCTGTCTCCAG  
CCACTTTCCTCCTGGCACTGCCACCAGCCTCACCGCTGCGGGCAGGGGGAGGCCAGCAGGCCCGGGCC  
CAGCACCCCTTCCCTGGCACCAGGGTCTGCCTCTCACTCGCCAGGTCCCGAAGGACACTGCCACAGGGA  
CGCCTTCCCTCCCTCCCTCCAGCCCAACCCCTGCACAGCCCTCCTCCTTCCCGCTTTTCCCTTCTCC  
CTCCTGCTCCAGGCCCAAGGCGTGTGGTTTTGGCTTCTGGTGCCCATAGTCCCTGGACTGAGTCCCC  
AGGCCTTCCCTTACCCGACTTCCAACTCTTCTTGTGGTATCAGTTTCTTCTCGGAAATGAGAAAGCT  
GGAATCCTGGTCCCCAGCAGGAGAGCCTAGTCTCCCCCAGCCCTCCAGCCACCAGGGTGTCTCTAGG  
ATGCAGTGGCAGATCCACTCACTCTGCTGCCTCCAGCAGGACCCAGGCCACTTCAACTCTTATGGG  
TTCTCCACCTGCCCCAGAGCTTCTCAAGGGAGGTAAGGGGGCACCTGAGCCACAGGACCCCTACTTC  
ACAGCTCACAGGGGCAGGAGGACGCTCCCCGCTCCAGGACCCCTGTTGCTATGGTGACACAGCGTTTCT  
AGGACAGAGGGGCTCCAGTCTCCCCCACCACCCGTGCACGACTTCTCACCACCCCAAGGTTCCCTG  
CAGATGTCTGTGTGTCTGAGTGTCTTTTGGTTCTTTGACGCCAAGTCTCTTGGTTGTACCATGTGA  
CACACCTGTGCACTGGTGCCTGTCTTCTGTGGCTTCCACCTTGTAAATGATGCTCCTGCCTCTGCCTCC  
CAGCCCTCACCCAGCACAGCTCTGCCTGGACTTGGAGAGATGGGAGGACACCCCAACCAACATATG  
CTGTCTGGGCCCCCTCAGACATTCTGTTTCATCTCCATTATCTCCTCCTCCACCGTGTGAGTTTCT  
CTGCCCTTCCCTGCTGTCTTCTTCCCTCCTTAGGCCCCAGCCTGGGCCAGACCCATCCTCCAGCCA  
GGTTTCCCTCCAGCAGGCTCCTTCCCTCCTGTACCTCCTCTACCAACCCGGGTCTGAGCCCTCA

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TTCCTGACCGTCCGTGTTCTCAGGAGTGGTTGAGGACACAGGGCCCCAGCCCAGCCCTCTGCACCCCCCA  
GCCCCGCCATCTGCGCCCCACAGCCCCCTTTGGAGCTTTTCTCTTGTCTCTCACTCCTTCCCAGAAGTTT  
TTGCACAGAATTTCATTTTGAAAGTGTCTTTCTCATTCTCCATACCTCCCCCAAGCTCTCTCCAGCCCT  
TCCAGGGCTCAGAAAAATTAAATCTACTTGGATTAAAAACCAAGATGACAGCTTGACTGAAACAGACACTC  
TGGAAATCACTGACCAGGACATGTTTGGAGATGCCAGCACGAGTCTGGTTGTGCCGGAGAAAGTCAAAAC  
TCCCATGAAGTCCAGTAAACGGATCTCCAGGGCTCTGCCTCCCCAGCAAAAGTGGAGGGGTGCACACA  
CCCCCGCAGAAGAGGAGCAGCCCCCTGAAGGAGCGGCAGCTCTCCAGCCCCCTAAGTGAGAGGACCAACA  
GTTCCGACAGCGAGCGCTCCCCAGATCTGGGCCACAGCACGAGATTCCAAGAAAGGTGGTGTATGACCA  
GCTCAATCAGATCCTGGTGTGTCAGATGCAGCCCTCCCAGAAAAATGTCATTCTGGTGAACACCACTGAGTG  
CAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCAGCGGAAGCCTGTGGTGTGCACCTGCTCCACCGTGG  
AGGTCCAGGCCGTGCTGTCCGCCCTGCTCACC GGATCCAGCGCTACTGCAACTGCAACTCTTCCATGCC  
GAGGCCAGTGAAGGTGGCTGCTGTGGGAGGCCAGAGCTACCTGAGCTCCATCCTCAGGTTCTTTGTCAAG  
TCCCTGGCCAAACAAGACCTCCGACTGGCTTGGCTACATCGCTTCCCTCATCATCCCCCTCGGTTCTCACC  
CTGTGGCCAAATACTTTGGGGTCACTCGACAGTAAATACAGTAGTTCTCTCTGGATTCTGGTTGGAGAGA  
TCTGTTCACTCGCTCGGAGCCACCAAGTGTGAGAGCAACTGGACGTGGCAGGGCGGGTGATGCAGTACGTC  
AACGGGGCAGCCACGACACACCAAGCTTCCCGTGGCCGAAGCCATGCTGACTTGCCGGCATAAGTTCCCTG  
ATGAAGACTCCTATCAGAAGTTTATTCCCTTCATTGGCGTGGTGAAGGTGGGTCTGGTTGAAGACTCTCC  
CTCCACAGCAGGCGATGGGGACGATTCTCCTGTGGTCAAGCTTACTGTGCCCTCCACATCACCACCTCC  
AGCTCGGGCCTGAGCCGAGACGCCACGGCCACCCCTCCCTCCCTCCATCTATGAGCAGCGCCCTGGCCA  
TCGTGGGGAGCCCTAATAGCCCATATGGGGACGTGATTGGCCTCCAGGTGGACTACTGGCTGGGCCACCC  
CGGGGAGCGGAGGAGGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAACACCCCTCAAGAGTGTCTTCCGC  
TCAGTGCAGGTGTCCCGCTGCCCCATAGTGGGGAGGCCAGCTTCTGGCACCATGGCCATGACTGTGG  
TCACCAAGAAAAAGAACAAAGATTCCCACTCTTCTTGAGCAAGAAACCCGAGAAAAGGAGGTGGA  
TTCTAAGAGCCAGGTCTTGAAGGCATCAGCCGCTCATCTGCTCAGCCAAGCAGCAGCAGTACTGTG  
AGAGTGTCCATCGATGGGGTGCAGTGGAGTGACATCAAGTTCTTCCAGCTGGCAGCCAGTGGCCCCACCC  
ATGTCAAGCACTTTCCAGTGGGACTCTTCACTGGCAGCAAGGCCACCTGAGGCCCTGTCTCCAGCCACT  
TTCCCTCCTGGCACTGCCACCAGCCTCACCCTGCGGGCAGGGGAGGCCAGCAGGCCCGGGGCCAGCA  
CCCCCTCCCTGGCACCAGGGTCTGCCTCTCACTCGCCACAGTCCCGAAGGACACTGCCACAGGGACGCCT  
TCCCTCCCCCTCCCCCTCAGCCCCACCCCTGCACAGCCCCCTCCTTCCCTTCCCGCTTTTCCCTTCTCCTCT  
GCTCCAGGCCCAAGCGTGTGGTTTGGCTTCTGGTGCCCATAGTCCCCTGGACTGAGTCCCCCAGGCC  
TTCTTCACCCGACTTCCAACTCTTCTTGTGGTATCAGTTTCTTCTTGGAAATGAGAAAGCTGGAAT  
CCTGCTCCCCCAGCAGGAGAGCCTAGTCTCCCCCAGCCCCCTCCAGCCACCAGGGTGTCTCTAGGATGCA  
GCTGCCAGATCCACTCACTCTGCTGCCCTCCAGCAGGACCCAAGGCCACTTTCAACTCTTATGGGGTTCTC  
CACCTGCCCCCAGGAGTCCCAAGGGAGGGTAAGGGGGCACCCCTGAGCCACAGGACCCCTACTTCAGAGC  
TCACAGGGGCAGGAGGCAGCTCCCCCTGCCCTCAGGACCCCTGTTGCTATGGTGACACAGCGTTTCTAGGAC  
AGAGGGGCTCCAGTCTCCCCCACCACCCGTGCACGACTTCTCACCACCCCCAGGTTCCCTGCAGAT  
GTCGTGTGTGCTGAGTGTCTTTGGTTCTTTGCACGCCAAGTCTCTTGGTTGTACCATGTGACACAC  
CCTGTGCACTGGTTCGTCTTCTGGTCTCCACCCCTGTTAATGATGCTCCTGCCTCTGCCTCCCAGCC  
CCTCACCAGCACAGCTCTGCCTGGACTTGGAGAGATGGGAGGCAGACCCCCACCACCATACATGCTGTC  
TGTGGCCCCCTCAGACATTCTGTTTCTATCTCCATTCTCTCCCTCCTCCACCGTGTCACTTTTTCTGCC  
TTTCCCTGCTCTGTTCTTCCCCCTCCTTAGGCCCCAGCCTGGGCCCAGACCCATCCTCCCAGCCAGGTTT  
CCCTCCAGCAGGCTCCTTCCCTCCTGTCACTCCTCTCACCACCCCGGGTCTGAGCCCTCATTCCT  
GACCGTCCGTGTTCTCAGGAGTGGTTGAGGACACAGGGCCCCAGCCCAGCCCTCTGCACCCCCCAGCCCG  
GCCATCTGCGCCGCCACAGCCCCCTTTGGAGCTTTTCTCTTGTCTCTCACTCCTTCCAGAAAGTTTGTGCA  
CAGAATTCTATTTGAAAGTGTTTTTCTCATTCTCTATACCTCCCCCAAGCTCTCTCCAGCCCTTCCCA  
GGGCTCAGCCCTGTCTGCTGAGCGTCTCTGGGCCAGAGAGAGGAGATGGGGGTGGGAGGGACTGAGTT  
GATGTTGGGTTTTTCATTCAATAAATTGGTGATTCTTACCGACAAAAA

Human PACS-1 mRNA sequence - var3 (public gi: 33243994) (SEQ ID NO: 97)  
CAGAAAGCATCCTCAGCACGCCAAAGCCCAAGCTCAAGCCTTTCTTTGAGGGGATGTCGCGAGTCCAGCTC  
CCAGACGGAGATTGGCAGCCTCAACAGCAAAAGGCAGCCTCGGAAAAGACACCAGCCCTATGGAATTG  
GCTGCTCTAGAAAAATTAAATCTACTTGGATTAAAAACCAAGATGACAGCTTGACTGAAACAGACACTC  
TGGAAATCACTGACCAGGACATGTTTGGAGATGCCAGCACGAGTCTGGTTGTGCCGGAGAAAGTCAAAAC  
TCCCATGAAGTCCAGTAAACGGATCTCCAGGGCTCTGCCTCCCCAGCAAAAGTGGAGGGGTGCACACA  
CCCCCGCAGAAGAGGAGCAGCCCCCTGAAGGAGCGGCAGCTCTCCAGCCCCCTAAGTGAGAGGACCAACA  
GTTCCGACAGCGAGCGCTCCCCAGATCTGGGCCACAGCACGAGATTCCAAGAAAGGTGGTGTATGACCA  
GCTCAATCAGATCCTGGTGTGTCAGATGCAGCCCTCCCAGAAAAATGTCATTCTGGTGAACACCACTGAGTG  
CAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCAGCGGAAGCCTGTGGTGTGCACCTGCTCCACCGTGG  
AGGTCCAGGCCGTGCTGTCCGCCCTGCTCACC GGATCCAGCGCTACTGCAACTGCAACTCTTCCATGCC  
GAGGCCAGTGAAGGTGGCTGCTGTGGGAGGCCAGAGCTACCTGAGCTCCATCCTCAGGTTCTTTGTCAAG  
TCCCTGGCCAAACAAGACCTCCGACTGGCTTGGCTACATCGCTTCCCTCATCATCCCCCTCGGTTCTCACC  
CTGTGGCCAAATACTTTGGGGTCACTCGACAGTAAATACAGTAGTTCTCTCTGGATTCTGGTTGGAGAGA  
TCTGTTCACTCGCTCGGAGCCACCAAGTGTGAGAGCAACTGGACGTGGCAGGGCGGGTGATGCAGTACGTC  
AACGGGGCAGCCACGACACACCAAGCTTCCCGTGGCCGAAGCCATGCTGACTTGCCGGCATAAGTTCCCTG  
ATGAAGACTCCTATCAGAAGTTTATTCCCTTCATTGGCGTGGTGAAGGTGGGTCTGGTTGAAGACTCTCC  
CTCCACAGCAGGCGATGGGGACGATTCTCCTGTGGTCAAGCTTACTGTGCCCTCCACATCACCACCTCC  
AGCTCGGGCCTGAGCCGAGACGCCACGGCCACCCCTCCCTCCCTCCATCTATGAGCAGCGCCCTGGCCA  
TCGTGGGGAGCCCTAATAGCCCATATGGGGACGTGATTGGCCTCCAGGTGGACTACTGGCTGGGCCACCC  
CGGGGAGCGGAGGAGGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAACACCCCTCAAGAGTGTCTTCCGC  
TCAGTGCAGGTGTCCCGCTGCCCCATAGTGGGGAGGCCAGCTTCTGGCACCATGGCCATGACTGTGG  
TCACCAAGAAAAAGAACAAAGATTCCCACTCTTCTTGAGCAAGAAACCCGAGAAAAGGAGGTGGA  
TTCTAAGAGCCAGGTCTTGAAGGCATCAGCCGCTCATCTGCTCAGCCAAGCAGCAGCAGTACTGTG  
AGAGTGTCCATCGATGGGGTGCAGTGGAGTGACATCAAGTTCTTCCAGCTGGCAGCCAGTGGCCCCACCC  
ATGTCAAGCACTTTCCAGTGGGACTCTTCACTGGCAGCAAGGCCACCTGAGGCCCTGTCTCCAGCCACT  
TTCCCTCCTGGCACTGCCACCAGCCTCACCCTGCGGGCAGGGGAGGCCAGCAGGCCCGGGGCCAGCA  
CCCCCTCCCTGGCACCAGGGTCTGCCTCTCACTCGCCACAGTCCCGAAGGACACTGCCACAGGGACGCCT  
TCCCTCCCCCTCCCCCTCAGCCCCACCCCTGCACAGCCCCCTCCTTCCCTTCCCGCTTTTCCCTTCTCCTCT  
GCTCCAGGCCCAAGCGTGTGGTTTGGCTTCTGGTGCCCATAGTCCCCTGGACTGAGTCCCCCAGGCC  
TTCTTCACCCGACTTCCAACTCTTCTTGTGGTATCAGTTTCTTCTTGGAAATGAGAAAGCTGGAAT  
CCTGCTCCCCCAGCAGGAGAGCCTAGTCTCCCCCAGCCCCCTCCAGCCACCAGGGTGTCTCTAGGATGCA  
GCTGCCAGATCCACTCACTCTGCTGCCCTCCAGCAGGACCCAAGGCCACTTTCAACTCTTATGGGGTTCTC  
CACCTGCCCCCAGGAGTCCCAAGGGAGGGTAAGGGGGCACCCCTGAGCCACAGGACCCCTACTTCAGAGC  
TCACAGGGGCAGGAGGCAGCTCCCCCTGCCCTCAGGACCCCTGTTGCTATGGTGACACAGCGTTTCTAGGAC  
AGAGGGGCTCCAGTCTCCCCCACCACCCGTGCACGACTTCTCACCACCCCCAGGTTCCCTGCAGAT  
GTCGTGTGTGCTGAGTGTCTTTGGTTCTTTGCACGCCAAGTCTCTTGGTTGTACCATGTGACACAC  
CCTGTGCACTGGTTCGTCTTCTGGTCTCCACCCCTGTTAATGATGCTCCTGCCTCTGCCTCCCAGCC  
CCTCACCAGCACAGCTCTGCCTGGACTTGGAGAGATGGGAGGCAGACCCCCACCACCATACATGCTGTC  
TGTGGCCCCCTCAGACATTCTGTTTCTATCTCCATTCTCTCCCTCCTCCACCGTGTCACTTTTTCTGCC  
TTTCCCTGCTCTGTTCTTCCCCCTCCTTAGGCCCCAGCCTGGGCCCAGACCCATCCTCCCAGCCAGGTTT  
CCCTCCAGCAGGCTCCTTCCCTCCTGTCACTCCTCTCACCACCCCGGGTCTGAGCCCTCATTCCT  
GACCGTCCGTGTTCTCAGGAGTGGTTGAGGACACAGGGCCCCAGCCCAGCCCTCTGCACCCCCCAGCCCG  
GCCATCTGCGCCGCCACAGCCCCCTTTGGAGCTTTTCTCTTGTCTCTCACTCCTTCCAGAAAGTTTGTGCA  
CAGAATTCTATTTGAAAGTGTTTTTCTCATTCTCTATACCTCCCCCAAGCTCTCTCCAGCCCTTCCCA  
GGGCTCAGCCCTGTCTGCTGAGCGTCTCTGGGCCAGAGAGAGGAGATGGGGGTGGGAGGGACTGAGTT  
GATGTTGGGTTTTTCATTCAATAAATTGGTGATTCTTACCGACAAAAA

Human PACS-1 mRNA sequence - var4 (public gi: 34420884) (SEQ ID NO: 98)  
CGCCGCGCCGCGCGGGGGAAGCCTGGGAGCCAGATCGGCGTGCCTCGGCCCTCCGTAACCCCGCCCTA  
GCCGGGCCGCGGAAACGCGGAGGGGCGGGCGGTCCCGAGGCGCGGGGCGGCAGCGCCGAGCG  
GGGATCCGGGGTTCGCCAGTCCCCTCAGCAGCCGATGGCGGAAACGCGAGGGGCGGGCGGTGGTCCCGGA  
GGCGCCGGGGGCGGCAGCGGCCAGCGGGGATCCGGGGTTCGCCAGTCCCCTCAGCAGCCGCGCCGAGC  
AGCAGCAGCAGCAGCGCCGAGCAGCCGAGCCCCCAAGCTGGCCAGGCCACCTCGTCTCTCTGTC  
CACCTCGGCGGGGCTGCCTCCTCTCTGCTCTACCTCCACCTCCATGGCCGTGGCGGTGGCCTCG

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GGCTCCGCGCCTCCCGGTGGCCCGGGGCCAGGCCGACCCCCGCCCCGGTGCAGATGAACCTGTACGCCA  
CCTGGGAGGTGGACCGGAGCTCGTCCAGCTGCGTGCTAGGCTATTAGCTTGACCCTGAAGAACTCGT  
CATGCTAAAAGAAATGGACAAAAGATCTTAACTCAGTGGTTCATCGCTGTGAAGCTGCAGGGTTCAAAAAGA  
ATTCTTCGCTCCAACGAGATCGTCTTCCAGCTAGTGGACTGGTGGAAACAGAGCTCCAATTAACCTTCT  
CCCTTCAGTACCCTCATTTCTTAAGCGAGATGCCAACAGCTGCAGATCATGCTGCAAAGGAGAAAAAG  
TTACAAGAAATCGGACCATCTTGGGCTATAAGACCTTGGCCGTGGGACTCATCAACATGGCAGAGGTGATG  
CAGCATCCTAATGAAGGCGCACTGGTGCTTGGCTACACAGCAACGTGAAGGATGTCTCTGTGCTGTGG  
CAGAAATAAAGATCTACTCCCTGTCCAGCAACCCATTGACCATGAAGGAATCAAATCCAAGCTTTCTGA  
TCGTTCTCTTGATATTGACAATTATTCTGAGGAAGGGAAGAGAGTTTCTCATCAGAACAGGAAGGCAGT  
GATGATCCATTGCATGGGCAGGACTTGTCTACGAAGACGAAGATCTCCGGAAGTGAAGAAGACCCGGA  
GGAAACTAACCTCAACCTCTGCCATCACAAGGCAACCTAACATCAAACAGAAGTTTGTGGCCCTCTTGAA  
GCGGTTTAAAGTTTCAGATGAGGTGGGCTTTGGGCTGGAGCATGTGTCCCGCGAGCAGATCCCGGAAGTG  
GAAGAGGACTTGGATGAATTGTATGACAGTCTGGAGATGTACAACCCAGCGACAGTGGCCCTGAGATGG  
AGGAGACAGAAAAGCATCTCAGCAGCCAAAGCCAAAGCTCAAGCCTTCTTTGAGGGGATGTCCGATGC  
CAGCTCCCAGACGGAGATTGGCAGCCTCAACAGCAAAGGCAGCCTCGGAAAAGACACCACCAGCCCTATG  
GAATTGGTGTCTAGAAAAAATAAATCTACTTGGATTAAAAACCAAGATGACAGCTTGACTGAAACAG  
ACACTCTGGAAATCACTGACCAGGACATGTTTGGAGATGCCAGCAGAGTCTGGTTGTGCCGGAGAAAGT  
CAAACTCCCATGAAGTCCAGTAAAACGGATCTCCAGGGCTCTGCCTCCCCCAGCAAGTGGAGGGGGTG  
CACACACCCCGGAGAGAGGAGCAGCCCTGAAGAGCGGCAGCTCTCCAAGCCCTAAGTGAGAGGA  
CCAACAGTTCCGACAGCGAGCGCTCCCAGATCTGGGCCACAGCAGCAGATTCCAAGAAAGGTGGTGTA  
TGACCAGTCAATCAGATCTTGGTGTGATGACAGCCTCCAGAAAATGTATTCTGGTGAACACCACT  
GACTGGCAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCAGCGGAAGCCTGTGGTGTGCACCTGCTCCA  
CCGTGGAGGTCCAGGCCGTGTGTCCGCCCTGCTCAGCCGGATCCAGCGCTACTGCAACTGCAACTCTTC  
CATCCGAGGGCTAGAGTGAAGTGGCTGTGTGGGAGCCAGAGCTACCTGAGCTCCATCCTCAGGTTCTTT  
GTCAAGTCCCTGGCCAACAAGACCTCCGACTGGCTTGGCTACATGCGCTTCTCATCATCCCCCTCGGTT  
CTCACCTGTGGCCAAATATTGGGGTCACTGACAGTAATAACAGTAGTTCCTTCTGGATTCTGGTTG  
GAGAGATCTGTTCACTCGCTCGGAGCCACCACTGTGAGAGCAACTGGACGTGGCAGGGCGGGTGATGCAG  
TACGTCAACGGGGCAGCCACGACACACAGCTTCCCGTGGCCGAAGCCATGCTGACTTGGCCGCATAAGT  
TCCCTGATGAAGACTCTTATCAGAAGTTTATTCCTTCAATTGGCGTGGTGAAGGTGGGTCTGGTTGAAGA  
CTCTCCCTCCACAGCAGGCGATGGGGACGATTTCTCTGTGGTCAGCCTTACTGTGCCCTCCACATCAACA  
CCCTCCAGCTCGGGCTGAGCCGAGACGCCACGGCCACCCCTCCCTCCTCCCATCTATGAACAGCGCCC  
TGGCCATCGTGGGGAGCCCTAATAGCCCATATGGGGACGTGATTGGCCTCCAGGTGGACTACTGGCTGGG  
CCACCCCGGGGAGCGGAGGAGGGAAGGCGACAAGAGGAGCGCCAGCTCGAAGAACACCCCTCAAGAGTGT  
TTCGGCTCAGTGCAGGTTCCTCGCCTGCCCATAGTGGGGAGGCCAGCTTTCTGGCACCATGGCCATGA  
CTGTGGTCACCAAGAACTGAACAAGAAAGTTCCCACTATCTTCTGAGCAAGAAACCCGAGAAAGGA  
GGTGGATTCTAAGAGCCAGGTCAATTGAAGGCATCAGCCGCTCATCTGCTCAGCCAAGCAGCAGCAGACT  
ATGCTGAGAGTGTCCATCGATGGGGTCGAGTGGAGTGACATCAAGTTCTTCCAGCTGGCAGCCCAGTGGC  
CCACCCATGTCAAGCACTTTCCAGTGGGACTCTTTCAGTGGCAGCAAGGCCACCTAG

Human PACS-1 mRNA sequence - var5 (public gi: 6330230) (SEQ ID NO: 99)

CTGCCATCACAAGGCAACCTAACATCAAACAGAAGTTTGTGGCCCTCCTGAAGCGGTTTAAAGTTTCAGA  
TGAGGTGGGCTTTGGGCTGGAGCATGTGTCCCGCGAGCAGATCCGGGAAGTGAAGAGGACTTGGATGAA  
TTGTATGACAGTCTGGAGATGTACAACCCAGCGACAGTGGCCCTGAGATGGAGGAGACAGAAAGCATCC  
TCAGCAGCCAAAGCCCAAGCTCAAGCCTTTCTTTGAGGGGATGTGCGAGTCCAGCTCCCAGACGGAGAT  
TGGCAGCCTCAACAGCAAAGGCAGCCTCGGAAAAGACACCACAGCCCTATGGAATTGGCTGCTCTAGAA  
AAAATTAATCTACTTGGATTAAAAACCAAGATGACAGCTTGACTGAAACAGACACTCTGGAATCACTG  
ACCAGGACATGTTTGGAGATGCCAGCAGAGTCTGGTTGTGCCGAGAAAAGTCAAACTCCCATGAAGTC  
CAGTAAAACGGATCTCAGGGCTCTGCCTCCCCCAGCAAAGTGGAGGGGGTGCACACACCCCGGCAGAAG  
AGGAGCACGCCCCCTGAAGGAGCGGCAGTCTCCAAGCCCCCTAAGTGAGAGGACCAACAGTTCCGACAGCG  
AGCGCTCCCCAGATCTGGGCCACAGCAGCAGATCCAAGAAAGGTGGTGTATGACCAGCTCAATCAGAT  
CCTGGTGTGATGACAGCCCTCCAGAAAATGTCAATCTGGTGAACACCACTGACTGGCAGGGCCAGTAT  
GTGGCTGAGCTGCTCCAGGACCAGCGGAAGCCTGTGGTGTGCACCTGCTCCACCGTGGAGGTCCAGGCCG  
TGCTGTCCGCCCTGTCAACCCGATCCAGCGCTACTGCAACTGCAACTCTTCCATGCCGAGGCCAGTGAA  
GGTGGCTGCTGTGGGAGGCCAGAGCTACCTGAGCTCCATCCTCAGGTTCTTTGTCAAGTCCCTGGCCAAAC  
AAGACCTCCGACTGGCTTGGCTACATGCGCTTCTCATCATCCCCCTCGGTTCTCACCTGTGGCCAAAT  
ACTTGGGGTCACTGACAGTAATAACAGTAGTTCCTTCTGGATTCTGGTTGGAGAGATCTGTTCACTGCG  
CTCGGAGCCACCACTGTGAGAGCAACTGGACGTGGCAGGGCGGGTGATGCAGTACGTCAACGGGGCAGCC  
ACGACACACCAGCTTCCCGTGGCCGAAGCCATGCTGACTTGCCGGCATAAGTTCCCTGATGAAGACTCCT  
ATCAGAAGTTTATTCCTTCAATTGGCGTGGTGAAGGTGGGTCTGGTTGAAGACTCTCCCTCCACAGCAGG  
CGATGGGGACGATTCTCCTGTGGTCAGCCTTACTGTGCCCTCCACATCACCACCTCCAGCTCGGGCCTG  
AGCCGAGACGCCACGGCCACCCCTCCCTCCTCCCATCTATGAGCAGCGCCCTGGCCATCGTGGGGAGCC  
CTAATAGCCCATATGGGGACGTGATTGGCCTCCAGGTGGACTACTGGCTGGGCCACCCCGGGAGCCGAG  
GAGGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAACACCCCTCAAGAGTGTCTTCCGCTCAGTGCAGGTG

Figure 36 part - 55



TCCCGCCTGCCCCATAGTGGGGAGGCCAGCTTTCTGGCACCATGGCCATGACTGTGGTCACCAAAGAAA  
 AGAACAAAGAAAGTTCCACCATCTTCTGAGCAAGAAACCCCGAGAAAAGGAGGTGGATTCTAAGAGCCA  
 GGTCAATTGAAGGCATCAGCCGCCTCATCTGCTCAGCCAAGCAGCAGACTATGCTGAGAGTGTCCATC  
 GATGGGGTTCGAGTGGAGTGACATCAAGTTCTTCCAGCTGGCAGCCCAGTGGCCCCACCCATGTCAAGCACT  
 TTCCAGTGGGACTCTTCAGTGGCAGCAAGGCCACCTGAGGCCCTGTCTCCAGCCACTTTCCCTCCTGGC  
 ACTGCCACCAGCCTCACCGCCTGCGGGCAGGGGGAGGCCAGCAGGCCCGGGCCAGCACCCCTTCCCTGG  
 CACCAGGGTCTGCCTCTCACTCGCCAGGTCCCAGGACACTGCCACAGGGACGCCTTCCCTCCCTCC  
 CCTCCAGCCCACCCTGCACAGCCCTCCTCCTCCCGCTTTTCCCTTCTCCCTCCTGCTCCAGGCCCA  
 AGGCGTGTGGTTTTGCTTCTGGTGCCCATAGTCCCTGGACTGAGTCCCCCAGGCCTTCTTACCCG  
 ACTTCCAAACTCTTCTTGTGGTATCAGTTTCTTCTCGAAATGAGAAAGCTGGAATCCTGGTCCCCAG  
 CAGGAGAGCCTAGTCTCCCCCAGCCCTCCAGCCACCAGGGTGTCTCTAGGATGCAGCTGCCAGATCC  
 ACTCACTCTGCTGCCTCCAGCAGGACCCAAGGCCACTTTCAACTCTTATGGGGTCTCCACCTGCCCCAG  
 AGCTTCCCAAGGGAGGGTAAGGGGGCACCCTGAGCCACAGGACCCCTACTTCACAGCTCACAGGGGACAG  
 GAGGCAGCTCCCCTGCTCCAGGACCTGTTGCTATGGTGACACAGCGTTTCTAGGACAGAGGGGCTCC  
 CAGTCTCCCCCACCACCCGTGCACGACTTCTCACCACCCCCAGGTTCCCTGCAGATGTGCTGTGTGTC  
 CTGAGTGTCTTTTGGTTCTTTGCACGCCAAGTCTCTTGGTTGTACCATGTGACACACCCTGTGCACTGG  
 TCGCTGTCTTCTGCTTCCACCCTTGTTAATGATGCTCTGCCTCTGCCTCCAGCCCTCACCAGCA  
 CAGCTCTGCCTGGACTTGGAGAGATGGGAGGCAGACCCCCACCACCATAACATGCTGTCTGTGGCCCTCA  
 GACATTCTGTTTCATCTCCATTCACTCCTCCTCCAGCGTGTGAGTTTCTGCTTCTCCCTGCTCT  
 GTTCTTCCCCCTCCTTAGGCCCCAGCCTGGGGCCAGACCCATCCTCCAGCCAGGTTTCCCTCCAGCAGG  
 CTCCTTCCCTCCTGTCACTCCTCTCACCACCCGGGGTCTGAGCCCTCATTCTGACCGTCCGTGT  
 TCTCAGGAGTGGTTGAGGACACAGGCCCCAGCCAGCCCTCTGCACCCCCAGCCCGGCCATCTGCGCC  
 CCAGACCCCTTTGGAGCTTTTCTCTTGTCTCTCACTCCTTCCAGAAAGTTTGTGACAGAACTTCATT  
 TTGAAAGTGTGTTTCTCATTCTCCATACCTCCCCAAGCTCTCCTCCAGCCCTTCCAGGGCTCAGCCCT  
 GCTGTCTGAGCGTCTCCTGGGCCAGAGAGAGGAGATGGGGGTGGGAGGACTGAGTTGATGTTGGGTTT  
 TTCATTCAATAAATTGGTGATTTCTTACCG

Human PACS-1 mRNA sequence - var6 (public gi: 7022110) (SEQ ID NO: 100)

CCCTAAGTGAGAGGACCAACAGTTCCGACAGCGAGCGCTCCCCAGATCTGGGCCACAGCAGCAGATTCC  
 AAGAAAGGTGGTGTATGACCAGCTCAATCAGATCCTGGTGTGATGACAGCCCTCCAGAAAATGTCAAT  
 CTGGTGAACACCACTGACTGGCAGGGCCAGTATGCTGAGTGTGCTCCAGGACCAGCGGAAGCCTGTGG  
 TGTGCACCTGCTCCACCGTGGAGGTCCAGGCCGTGCTGTCCGCCCTGCTCACCCGGATCCAGCGCTACTG  
 CAACTGCAACTCTTCCATGCGGAGGCCAGTGAAGGTGGCTGCTGTGGGAGGCCAGAGCTACCTGAGCTCC  
 ATCCTCAGGTTCTTTGTCAAGTCCCTGGCCAACATGACCTCCGACTGGCTTGGCTACATGCGCTTCCTCA  
 TCACTCCCCCTCGGTTCTCACCCTGTGGCCAAATACTTGGGGTCAGTCGACAGTAAATACAGTAGTTCCTT  
 CCTGGATTCTGGTTGGAGAGATCTGTTCACTGCTCGTCCGAGCCACCAGTGTGACAGCAACTGGGGGCCA  
 GGGCGGGTGATGCAGTACGTCAACGGGGCAGCCACGACACACCAGCTTCCCGTGGCCGAAGCCATGCTGA  
 CTTGCCCGCATAAGTTCCCTGATGAAGACTCCTATCAGAAGTTTATTCCTTCATTGGCGTGGTGAAGGT  
 GGGTCTGTTGAAGACTCTCCCTCCACAGCAGGCCAGTGGGGACGATTCTCCTGTGGTTCAGCCTTACTGTG  
 CCCTCCACATCACACCCTCCAGCTCGGGCCTGAGCCGAGACGCCACGGCCACCCCTCCCTCCTCCCCAT  
 CTATGAGCAGCGCCCTGGCCATCGTGGGGAGCCCTAATGACCCATATGGGGACGTGATTGGCCCTCCAGT  
 GGACTACTGGCTGGGCCACCCCGGGGAGCGGAGGAGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAAC  
 ACCCTCAAGAGTGTCTTCCGCTCAGTGCAGGTGTCCCGCTGCCCATAGTGGGGAGGCCAGCTTTCTG  
 GCACCATGGCCATGACTGTGGTCACCAAGAAAAGAAACAAGAAAGTTCCACCATCTTCTGAGCAAGAA  
 ACCCCGAGAAAAGGAGGTGGATTCTAAGAGCCAGGTCAATTGAAGGCATCAGCCGCCTCATCTGTTCTTCC  
 CCCTCCTTAGGCCCCAGCCTGGGCCCAGACCCATCCTCCAGCCAGGTTTCCCTCCAGCAGGCTCCTTCC  
 CTCCCTGTCACTCCTCTCACCACCCGGGGTCTGAGCCCTCATTCTGACCGTCCGTGTTCTCAGGA  
 GTGGTTGAGGACACAGGGCCCGAGCCAGCCCTGTGACCCCCCAGCCCGGCCATCTGCGCCCCACAGCC  
 CTTTGGAGCTTTTCTCTTGTCTCTCACTCCTTCCAGAAAGTTTGTGACAGAACTTCATTGAAAGT  
 GTTTTCTCATTCTCCATACCTCCCCAAGCTCTCCTCCAGCCCTTCCAGGGCTCAGCCCTGCTGTCTCCT  
 GAGCGTCTCCTGGGCCAGAGAGAGGAGATGGGGGTGGGAGGACTGAGTTGATGTTGGGTTTTTCATTCA  
 ATAAATTGGTGATTTCTTACCGAC

Human PACS-1 protein sequence - var1 (public gi: 7022111) (SEQ ID NO: 362)

MPRPVKVAAGVGGQSYLSSILRFVVKSLANMTSDWLGYMRFLIIPLGSHPVAKYLGSDSKYSSSFLDSGW  
 RDLFSRSEPPVSEQLDVAGRMVQYVNGAATTHQLPVAEAMLTCRHKFPDEDSYQKFIPIFGVVKVLVED  
 SPSTAGDGDSPVVSILTVPSTSPSSSSGLSRDATPPSSPSMSSALAIVGSPPNSPYGDVIGLQVDYWL  
 HPGERRRREGDKRCSKNTLKSQVFRSVQVSRPLPHSGEALSGTMAMTVVTKEKNKKVPTIFLSKKPREKE  
 VDSKSQVIEGISRLICSSPSLGPLGPDPSQPGFPPAGSFPPCHLPLTNPGSEPLIPDRPCSQEWLRTQ  
 GPSPALCTPQPGHLRPTAPLELFSCPLTPSQKFLHRTSF

Human PACS-1 protein sequence - var2 (public gi: 6330231) (SEQ ID NO: 363)

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AITROPNIKQKFVALLKRFKVSDEVGFGLEHVSREQIREVEEDLDELYDSLEMYNPSSDGPMEETESIL  
STPKPKLPKPFEGMSQSSSQTEIGSLNSKGSGLGKDTTSPMELAALEKIKSTWIKNQDDSLTETDLEITD  
QDMFGDASTSLVPEKVKTPMKSSKTDLQGSASPSKVEGVHTPRQKRSTPLKERQLSKPLSERTNSSDSE  
RSPDLGHSTQIPRKVVYDQLNQILVSDAALPENVILVNTTDWQGQYVAELLQDQRKPVVCTCSTVEVQAV  
LSALLTRIQRVCNCSMPRPVKVAAVGGQSYLSSILRFFVKSLANKTSDWLGMYRFLIIPLGSHPVAKY  
LGSVDSKYSSSFLLDSGWRDLFSRSEPPVSEQLDVAGRMQYVNGAATTHQLPVAEAMLTCTRHKFPDEDSY  
QKFIPFIGVVKVGLVEDSPSTAGDGDSPVVSILTVPSTSPSSSSGLSRDATATPPSSPSMSSALAIVGSP  
NSPYGDVIGLQVDYWLGHGPERRREGDKRDASSKNTLKS VFRSVQVSRPLPHSGEAQLSGTMAMTVVTKK  
NKKVPTIFLSKKPREKEVDSKSQVIEGISRLICSAKQQQTMLRVSIDGVEWSDIKFFQLAAQWPTHVKHF  
PVGLFSGSKAT

Human PACS-1 protein sequence - var3 (public gi: 34420885) (SEQ ID NO: 364)  
MAERGGAGGGPGGAGGGSGQSGVAQSPQQPPPPQQQQQPPQQPTPPKLAQATSSSSSTAAAASSSS  
STSTSMVAVASGSAPGGPGPGRTPAPVQMNLATWEVDRSSSSCVPRFLSLTLKKLVMLKEMDKDLNS  
VVIQVKGSKRIILRSNEIVLPASGLVETELQTLFSLQYPHFLKRDANKLQIMLQRRKRYKNRTILGYKT  
LAVGLINMAEVMQHPNEGALVLGLHSNVKDVSPVVAEIKIYSLSSQPIDHEGIKSKLSDRSPDIDNYSEE  
EEESFSSEQEGSDDPLHGQDLFYEDDLRKVKKTRRKLSTSAITROPNIKQKFVALLKRFKVSDEVGFG  
LEHVSREQIREVEEDLDELYDSLEMYNPSSDGPMEETESILSTPKPKLPKPFEGMSQSSSQTEIGSLNS  
KGSGLGKDTTSPMELAALEKIKSTWIKNQDDSLTETDLEITDQDMFGDASTSLVPEKVKTPMKSSKTDL  
QGSASPSKVEGVHTPRQKRSTPLKERQLSKPLSERTNSSDSERSPDLGHSTQIPRKVVYDQLNQILVSDA  
ALPENVILVNTTDWQGQYVAELLQDQRKPVVCTCSTVEVQAVLSALLTRIQRVCNCSMPRPVKVAAV  
GQSYLSSILRFFVKSLANKTSDWLGMYRFLIIPLGSHPVAKYLGVSVDKYSSSFLLDSGWRDLFSRSEPPV  
SEQLDVAGRMQYVNGAATTHQLPVAEAMLTCTRHKFPDEDSYQKFIPFIGVVKVGLVEDSPSTAGDGD  
PVSILTVPSTSPSSSSGLSRDATATPPSSPSMSSALAIVGSPNSPYGDVIGLQVDYWLGHGPERRREGDK  
RDASSKNTLKS VFRSVQVSRPLPHSGEAQLSGTMAMTVVTKELNKKVPTIFLSKKPREKEVDSKSQVIEGI  
SRLICSAKQQQTMLRVSIDGVEWSDIKFFQLAAQWPTHVKHFPVGLFSGSKAT

Human PACS-1 protein sequence - var4 (public gi: 33243995) (SEQ ID NO: 365)  
ESILSTPKPKLPKPFEGMSQSSSQTEIGSLNSKGSGLGKDTTSPMELAALEKIKSTWIKNQDDSLTETDLE  
ITDQDMFGDASTSLVPEKVKTPMKSSKTDLQGSASPSKVEGVHTPRQKRSTPLKERQLSKPLSERTNS  
SDSERSPDLGHSTQIPRKVVYDQLNQILVSDAALPENVILVNTTDWQGQYVAELLQDQRKPVVCTCSTVE  
VQAVLSALLTRIQRVCNCSMPRPVKVAAVGGQSYLSSILRFFVKSLANKTSDWLGMYRFLIIPLGSHP  
VAKYLGVSVDKYSSSFLLDSGWRDLFSRSEPPVSEQLDVAGRMQYVNGAATTHQLPVAEAMLTCTRHKFPD  
EDSYQKFIPFIGVVKVGLVEDSPSTAGDGDSPVVSILTVPSTSPSSSSGLSRDATATPPSSPSMSSALAI  
VGSPNSPYGDVIGLQVDYWLGHGPERRREGDKRDASSKNTLKS VFRSVQVSRPLPHSGEAQLSGTMAMTVV  
TKEKNKKVPTIFLSKKPREKEVDSKSQVIEGISRLICSAKQQQTMLRVSIDGVEWSDIKFFQLAAQWPTH  
VKHFPVGLFSGSKAT

Human PACS-1 protein sequence - var5 (public gi: 30962846) (SEQ ID NO: 366)  
MAERGGAGGGPGGAGGGSGQSGVAQSPQQPPPPQQQQQPPQQPTPPKLAQATSSSSSTAAAASSSS  
STSTSMVAVASGSAPGGPGPGRTPAPVQMNLATWEVDRSSSSCVPRFLSLTLKKLVMLKEMDKDLNS  
VVIQVKGSKRIILRSNEIVLPASGLVETELQTLFSLQYPHFLKRDANKLQIMLQRRKRYKNRTILGYKT  
LAVGLINMAEVMQHPNEGALVLGLHSNVKDVSPVVAEIKIYSLSSQPIDHEGIKSKLSDRSPDIDNYSEE  
EEESFSSEQEGSDDPLHGQDLFYEDDLRKVKKTRRKLSTSAITROPNIKQKFVALLKRFKVSDEVGFG  
LEHVSREQIREVEEDLDELYDSLEMYNPSSDGPMEETESILSTPKPKLPKPFEGMSQSSSQTEIGSLNS  
KGSGLGKDTTSPMELAALEKIKSTWIKNQDDSLTETDLEITDQDMFGDASTSLVPEKVKTPMKSSKTDL  
QGSASPSKVEGVHTPRQKRSTPLKERQLSKPLSERTNSSDSERSPDLGHSTQIPRKVVYDQLNQILVSDA  
ALPENVILVNTTDWQGQYVAELLQDQRKPVVCTCSTVEVQAVLSALLTRIQRVCNCSMPRPVKVAAV  
GQSYLSSILRFFVKSLANKTSDWLGMYRFLIIPLGSHPVAKYLGVSVDKYSSSFLLDSGWRDLFSRSEPPV  
SEQLDVAGRMQYVNGAATTHQLPVAEAMLTCTRHKFPDEDSYQKFIPFIGVVKVGLVEDSPSTAGDGD  
PVSILTVPSTSPSSSSGLSRDATATPPSSPSMSSALAIVGSPNSPYGDVIGLQVDYWLGHGPERRREGDK  
RDASSKNTLKS VFRSVQVSRPLPHSGEAQLSGTMAMTVVTKELNKKVPTIFLSKKPREKEVDSKSQVIEGI  
SRLICSAKQQQTMLRVSIDGVEWSDIKFFQLAAQWPTHVKHFPVGLFSGSKAT

Unigene Name: PPP1CA Unigene ID: Hs.183994

Human PPP1CA mRNA sequence - var1 (public gi: 287796) (SEQ ID NO: 101)  
GCAAGGAGCTGCTGGCTGGACGGCGGCATGTCCGACAGCAGAAGCTCAACCTGGACTCGATCATCGGGC  
GCCTGCTGGAAGTGCAGGGCTCGCGGCTGGCAAGATGTACAGCTGACAGAGAACGAGATCCGCGGCTCT  
GTGCCTGAAATCCCGGGAGATTTTTCTGAGCCAGCCATTCTTCTGAGCTGGAGGCACCCCTCAAGATC  
TGCGGTGACATACACGGCCAGTACTACGACCTTCTGCGACTATTTGAGTATGGCGGTTTCCCTCCCGAGA

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GCAACTACCTCTTTCTGGGGGACTATGTGGACAGGGGCAAGCAGTCCTTGGAGACCATCTGCCTGCTGCT  
GGCCTATAAGATCAAGTACCCCGAGAACTTCTTCTGCTCCGTGGGAACCCAGAGTGTGCCAGCATCAAC  
CGCATCTATGGTTTCTACGATGAGTGCAAGAGACGCTACAACATCAAAGTGTGGAAAACCTTCACTGACT  
GCTTCAACTGCCTGCCCATCGCGGCCATAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCTGTCCCC  
GGACCTGCAGTCTATGGAGCAGATTGCGCGGATCATGCGGCCACAGATGTGCCTGACCAGGCGCTGCTG  
TGTGACCTGCTGTGGTCTGACCTGACAAGGACGTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTT  
TTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCTCCACAAGCAGCACTTGGACCTCATCTGCCGAGCACA  
CCAGGTGGTAGAAGACGGCTACGAGTTCTTTGCCAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCAAC  
TACTGTGGCGAGTTTGACAATGCTGGCGCCATGATGAGTGTGGACGAGACCCCTCATGTGCTCTTTCCAGA  
TCCTCAAGCCCGCCGACAGAACAAGGGGAAGTACGGGCAGTTTCAAGTGGCCTGAACCCCTGGAGCCGACC  
CATCACCCACCCCGCAATTCCGCCAAAGCCAAGAAATAGCCCCCGCACACCACCTGTGCCCCAGATGA  
TGGATTGATTGTACAGAAATCATGCTGCCATGCTGGGGGGGGTACCCCGACCCCTAAGGCCACCTGT  
CACGGGGAACATGGAGCCTTGGTGTATTTTCTTTTCTTTTAAATGAATCAATAGCAGCGTCCAGTCC  
CCAGGGCTTCTGCTGCACCTGCGGTACTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGG  
GCAACGGCAGGCCAGGTCTGGGTCTCCAGCCGTGCTTGGCCTCAGGCTGGCAGCCCGATCCTGGGGCA  
ACCCATCTGGTCTCTGAATAAAGGTCAAAGCTGGATCGGAATC

Human PPP1CA mRNA sequence - var2 (public gi: 21758300) (SEQ ID NO: 102)

AAAAAAAAAAAAAGTTTCCCTCCATGAGGCAGCGCGCCGACCGCGAAGCATGGTCTCCACCAGCGGCG  
CCGCCACCTCCAGCGTCTCGGCAGGGAGTTGTGGTGCCGTAGAGGGCGGTCCCGCGGCCACGCCGCA  
CACCACCTGGGCAGGGGAGAGACTCAGGGGAGGCCACACACTCCCTGCCCCCAGCAGACCCCTACCG  
CCTGTGCCCCAAATTCAGACCAGACCCCTCACTGGACATTCAAGAAGCCCGTCTCCAAAGCTGCTTAA  
ATTGCACACGAGCTCTCCCTGCCACTCCCCATCTGGTCCCCAGACCTCTCCAGGGATTCTACCTACCCAG  
GCTTCCAGGCCCAGCTGGGGTCCCCCTCCAGGATGGCTCCTGCAGCCCTGGGGGCTGGGGCCACCTGGT  
GTGCCCCACCTAGCATCTCCCTGGGGCGACCTTTCCCTACCCCACTGGAGCTCCCTGAGGGCAGGGT  
GAATCTCTCCCTCTCAGTGTAGCCTAGAGCGGGTACTCAGGAGGGTCCGTAAGCCTTCTGACTCTCCA  
GCTTAGAGGCCCTCCTGAAGGCGTCCAGGCATCAGAGGTTTATCAGGAGGCCCTGGGTGAGCTCTACG  
TGGGCAAGAGCTCTCTGGGAAGACGGGGAGGTCTAAGGCCAGCACAGAGTGGCCAGAGGGCCACACCAA  
CTCCCATCCCTGGTCCAGCCAGGTGGTCTCACCTGAGCAGGGCAGCTGGGCAGGTGGGTACACAGCCTC  
CACCAGGACACTCTCTCTCTCTCCAGCTTCTCCAGCAGCGCCAGCACTGTGTCCACCACTGCACCCAGC  
TCTGCCCGCGGTGCAGACGCCATGCCTGCCGCCCCCGCCAGCGCCAGCCACTGAGCTTACAGCTACCT  
GCAGCAAGGAGGGGAAAGGGGCTCCTGGACACCAACCCAGGTACTGCAGGGTGGGGCACTTCCGCCACA  
GGAGCCGTGCAGGGCTCGCGGCTGGCAAGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCC  
TGAAATCCCGGGAGATTTTCTGAGCCAGCCCATTTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCCG  
TGACATACACGGCCAGTACTACGACCTTCTGCGACTATTGAGTATGGCGGTTCCTCCCGAGAGCAAC  
TACCTCTTTCTGGGGGACTATGTGGACAGGGGCAAGCAGTCTTGGAGACCATCTGCCTGCTGCTGGCCT  
ATAAGATCAAGTACCCCGAGAACTTCTTCTGCTCCGTGCTCCGTGGGAACCAAGTGTGCCAGCATCAACCGCAT  
CTATGGTTTCTACGATGAGTGCAAGAGACGCTACAACATCAAAGTGTGGAAAACCTTCACTGACTGCTTTC  
AACTGCCTGCCATCGCGGCCATAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCCCCGGACC  
TGCAGTCTATGGAGCAGATTGCGCGGATCATGCGGCCACAGATGTGCCTGACCAGGGCCTGTGTGTGA  
CCTGCTGTGGTCTGACCCTGACAAGGACGTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACC  
TTTGGAGCCGAGGTGGTGGCCAAAGTTCTCCACAAGCAGACTTGGACCTCATCTGCCGAGCACACCAGG  
TGGTAGAAGACGGCTACGAGTTCTTTGCCAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCAACTACTG  
TGGCGAGTTTGACAATGCTGGCGCCATGATGAGTGTGGACGAGACCCCTCATGTGCTCTTTCCAGATCCTC  
AAGCCCGCCGACAAGAACAAGGGGAAGTACGGGCAGTTCAAGTGGCCTGAACCCCTGGAGGCCGACCCATCA  
CCCCACCCCGCAATTCCGCCAAAGCCAAGAAATAGCCCCCGCACACCACCTGTGCCCCAGATGATGGAT  
TGATTGTACAGAAATCATGCTGCATGCTGGGGGGGGTCAACCCGACCCCTCAGGCCACCTGTACCG  
GGAACATGGAGCCTTGGTGTATTTTCTTTTCTTTTAAATGAATCAATAGCAGCGTCCAGTCCCCAG  
GGCTGCTTCTGCTGCACCTGCGGTGACTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGGGCAA  
CGGCAGGCCAGGTCTGGGTCTCCAGCCGTGCTTGGCCTCAGGGCTGGCAGCCCGATCCTGGGGCAACCC  
ATCTGGTCTCTGAATAAAGGTCAAAGCTGGATTCTCGC

Human PPP1CA mRNA sequence - var3 (public gi: 14124967) (SEQ ID NO: 103)

GGCTGCCGAGGGCGGGAGGCAGGAGCGGGCCAGGAGCTGCTGGGCTGGAGCGGCGCGCCGATGTCC  
GACAGCGAGAAGCTCAACCTGGACTCGATCATCGGGCGCCTGCTGGAGTGCAGGGCTCGCGCCTGGCA  
AGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTCTGAGCCA  
GCCATTTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTACTACGACCTT  
CTGCGACTATTGTAGTATGGCGGTTTCCCTCCCGAGAGCAACTACCTCTTTCTGGGGGACTATGTGGACA  
GGGGCAAGCAGTCTTGGAGACCATCTGCCTGTCTGGCCTATAAGATCAAGTACCCGAGAACTTCTT  
CCTGCTCCGTGGGAACACGAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGCAAGAGA  
CGCTACAACATCAAAGTGTGAAAACCTTCACTGACTGCTTCAACTGCCTGCCATCGCGGCCATAGTGG  
ACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCCCCGACCTGCAGTCTATGGAGCAGATTGCGCGGAT

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CATGCGGCCCCACAGATGTGCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCCTGACAAGGAC  
GTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCC  
TCCACAAGCACGACTTGGACCTCATCTGCCGAGCACACCAAGGTGGTAGAAGACGGCTACGAGTTCTTTGC  
CAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCACTACTGTGGCGAGTTTGACAATGCTGGCGCCATG  
ATGAGTGTGGACGAGACCTCATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGT  
ACGGGCAGTTTCAGTGGCCTGAACCTTGGAGGCCGACCCATCACCCACCCCGCAATTCCGCCAAAGCCAA  
GAAATAGCCCCCGCACACCACCTGTGCCCCAGATGATGGATTGATTGTACAGAAATCATGCTGCCATGC  
TGGGGGGGGGTACCCCGACCCCTCAGGCCACCTGTACAGGGGAACATGGAGCCTTGGTGTATTTTCT  
TTTCTTTTTTTAATGAATCAATAGCAGCGTCCAGTCCCCCAGGGCTGCTTCTGCCTGCACCTGCGGTGA  
CTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGGGCAACGGCAGGCCAGGTCGTGGGTCTCCAGCC  
GTGCTTGGCCTCAGGGCTGGCAGCCGATCCTGGGGCAACCCATCTGGTCTCTTGAATAAAGGTCAAAG  
TGGATTCTCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human PPP1CA mRNA sequence - var4 (public gi: 33872852) (SEQ ID NO: 104)  
CCTCGTGCCGAATTCGCACAGAGGAGCGGGCAGGAGCTGCTGGGCTGGAGCGGCGGCCCATGTCC  
GACAGCGAGAAGCTCAACCTGGACTCGATCATCGGGCGCCTGCTGGAAGTGCAGGGCTCGCGGCCTGGCA  
AGAATGTACAGCTGACAGAGAAGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTCTGAGCCA  
GCCCCATTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTACTACGACCTT  
CTGCGACTATTTGAGTATGGCGGTTCCTCCCGAGAGCAACTACCTCTTTCTGGGGGACTATGTGGACA  
GGGGCAAGCAGTCTTGGAGACCATCTGCTGTCTGGCCTATAAGATCAAGTACCCCGAGAAGTCTTCT  
CCTGCTCCGTGGGAACACGAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGAAGAGA  
CGCTACAACATCAAACTGTGGAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCGGCCATAGTGG  
ACGAAAAGATCTTCTGCTGCCACGGAGGCTGTCCCCGACCTGCAGTCTATGGAGCAGATTCCGGCGGAT  
CATGCGGCCCCACAGATGTGCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCCTGACAAGGAC  
GTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCC  
TCCACAAGCACGACTTGGACCTCATCTGCCGAGCACACCAAGGTGGTAGAAGACGGCTACGAGTTCTTTGC  
CAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCACTACTGTGGCGAGTTTGACAATGCTGGCGCCATG  
ATGAGTGTGGACGAGACCTCATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGT  
ACGGGCAGTTTCAGTGGCCTGAACCTTGGAGGCCGACCCATCACCCACCCCGCAATTCCGCCAAAGCCAA  
GAAATAGCCCCCGCACACCACCTGTGCCCCAGATGATGGATTGATTGTACAGAAATCATGCTGCCATGC  
TGGGGGGGGGTACCCCGACCCCTCAGGCCACCTGTGTCAGGGGAACATGGAGCCTTGGTGTATTTTCT  
TTTTCTTTTTTTAATGAATCAATAGCAGCGTCCAGTCCCCCAGGGCTGCTTCTGCCTGCACCTGCGGTG  
ACTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGGGCAACGGCAGGCCAGGTCGTGGGTCTCCAGC  
CGTGCTTGGCCTCAGGGCTGGCAGCCGATCCTGGGGCAACCCATCTGGTCTCTTGAATAAAGGTCAAAG  
CTGGATTCTCGAAAAAAAAAAAAAAAAAAAAA

Human PPP1CA mRNA sequence - var5 (public gi: 12804878) (SEQ ID NO: 105)  
CAGGAGCGGGCCAGGAGCTGCTGGGCTGGAGCGGCGGCCCATGTCCGACAGCGAGAAGCTCAACCT  
GGACTCGATCATCGGGCGCCTGCTGGAAGTGCAGGGCTCGCGGCCTGGCAAGAATGTACAGCTGACAGAG  
AACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTCTGAGCCAGCCATTCTTCTGGAGCTGG  
AGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTACTACGACCTTCTGCGACTATTTGAGTATGG  
CGGTTTCCCTCCCGAGAGCAACTACCTCTTTCTGGGGGACTATGTGGACAGGGGCAAGCAGTCCCTGGAG  
ACCATCTGCCCTGCTGCTGGCCCTATAAGATCAAGTACCCGAGAAGTCTTCTGCTCCGTGGGAACACG  
AGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGCAAGAGACGCTACAACATCAAACTGTG  
GAAAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCGGCCATAGTGGACGAAAAGATCTTCTGCTGC  
CACGGAGGCCTGTCCCCGACCTGCAGTCTATGGAGCAGATTCCGGCGGATCATGCGGCCACAGATGTGC  
CTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCCTGACAAGGACCTGCAGGGCTGGGGCGAGAA  
CGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTCTCTCCACAAGCACGACTTGGAC  
CTCATCTGCCGAGCACACCAAGTGGTAGAAGACGGCTACGAGTTCTTTGCCAAGCGGCAGCTGGTGACAC  
TTTTCTCAGCTCCCACTACTGTGGCGAGTTTGACAATGCTGGCGCCATGATGAGTGTGGACGAGACCT  
CATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGTACGGGCAGTTCAGTGGCCTG  
AACCTGGAGGCCGACCCATCACCCACCCCGCAATTCCGCCAAAGCCAAGAAATAGCCCCCGCACACCA  
CCCTGTGCCCCAGATGATGATTGATTGTACAGAAATCATGCTGCCATGCTGGGGGGGGGTACCCCGAC  
CCCTCAGGCCACCTGTACAGGGGAACATGGAGCCTTGGTGTATTTTCTTTTCTTTTTTTAATGAATCA  
ATAGCAGCGTCCAGTCCCCAGGGCTGCTTCTGCCTGCACCTGCGGTGACTGTGAGCAGGATCCTGGGG  
CCGAGGCTGCAGCTCAGGGCAACGGCAGGCCAGGTCGTGGGTCTCCAGCCGTGCTTGGCCTCAGGGCTGG  
CAGCCGATCCTGGGGCAACCCATCTGGTCTCTTGAATAAAGGTCAAAGCTGGATTCTCAAAAAAAAAA  
AAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human PPP1CA mRNA sequence - var6 (public gi: 34534606) (SEQ ID NO: 106)  
CTTCTGCTGACGCCGCCAGCGCCGACCACGAGCTGTTTCCCTCCATGAGGCAGCGCGCCGACCGC  
CGAAGCATGGTCTCCACAGCGGCGCCGACCGCCTCGTCGGCCGCCGCCCCAGCCGCGCGCGGCC

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ACAGCCCCCTCCAGCGCGCCGACGCCTCCAGACACAGGCCGCCGTTTCAGCTCCAGGGCCACTGGGCTTCT  
CCAGCAGCGCCAGCACTGTGTCCACCCTGCACCCAGCTCTGCCCCGCGGTGCAGACGCCATGCCTGCCG  
CCCCCGCCAGCGCCAGCCACTGAGCTTACAGCTACCTGCAGCAAGGAGGGGAAAGGGGCTCCTGGACA  
CCACCCCAAGTACTGCAGGGTGGGGCACTTCCGCCACAGGAGCCGTGCAGGGCTCGCGGCCCTGGCAAGAA  
TGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTTCTGAGCCAGCCC  
ATTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGCCAGTACTACGACCTTCTGC  
GACTATTTGAGTATGGCGGTTTCCCTCCCGAGAGCAACTACCTCTTCTGGGGGACTATGTGGACAGGGG  
CAAGCAGTCCCTGGAGACCATCTGCCTGCTGTGGCCTATAAGATCAAGTACCCCGAGAACTTCTCCTG  
CTCCGTGGGAACACGAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGAAGACGCT  
ACAACATCAAACCTGTGGAAAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCGGCCATAGTGGACGA  
AAAGATCTTCTGCTGCCACGGAGGCCTGTCCCGGACCTGCAGTCTATGGAGCAGATTCGGCGGATCATG  
CGGCCACAGATGTGCCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCTGACAAGGACGTGC  
AGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCTCTCCA  
CAAGCAGCTTGGACCTCATCTGCCGAGCACACAGGTGGTAGAAGACGGCTACGAGTCTTTTGCCAAAG  
CGGCAGCTGGTGGCACTTTTCTCAGCTCCCACTACTGTGGCGAGTTTGACAATGCTGGCGCCATGATGA  
GTGTGGACGAGACCCTCATGTGCTCTTTCAGATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGTACGG  
GCAGTTCAAGTGGCCTGAACCTGGAGGTGACCCATCACCCACCCCGCAATTCCGCCAAAGCCAAGAAA  
TAGCCCCCGCACACCACCTGTGCCCGAGATGATGGATTGATTGTACAGAAATCATGCTGCCATGCTGGG  
GGGGGGTCAACCCGACCCCTCAGGCCACCTGTACGGGGAACATGGAGCCTTGGTGTATTTTTCTTTCT  
TTTTTTAATGAATCAATAGCAGCGTCCAGTCCCCCAGGGCTGCTTCTGCTGCCTGCACCTGCGGTGACTG  
GAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGGGCAACGGCAGGCCAGGTCTGGGTCTCCAGCCGTGC  
TTGGCCTCAGGGCTGGCAGCCGGATCCTGGGGCAACCCATCTGGTCTCTTGAATAAAGGTCAAAGCTGGA  
TTCTC

Human PPP1CA mRNA sequence - var7 (public gi: 30582096) (SEQ ID NO: 107)  
ATGTCCGACAGCGAGAAGCTCAACCTGGACTCGATCATCGGGCGCCTGCTGGAAGTGCAGGGCTCGCGCG  
CTGGCAAGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTTCT  
GAGCCAGCCCATCTTCTGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTACTAC  
GACCTTCTGCGACTATTTGAGTATGGCGGTTTCCCTCCCGAGAGCAACTACCTCTTCTGGGGGACTATG  
TGGACAGGGGCAAGCAGTCTTGGAGACCATCTGCCTGCTGCTGGCCTATAAGATCAAGTACCCCGAGAA  
CTTCTTCTGCTCCGTGGGAACCAAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGC  
AAGAGACGCTACAACATCAAACCTGTGGAAAACCTTCACTGACTGCTTCAACTGCCTGCCATCGCGGCA  
TAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCCCGGACCTGCAGTCTATGGAGCAGATTG  
GCGGATCATGCGGCCCACAGATGTGCCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCCTGAC  
AAGACGTGCAGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTGGCCA  
AGTTCTTCCACAAGCAAGCTTGGACCTCATCTGCCGAGCACACAGGTGGTAGAAGACGGCTACGAGTT  
CTTTGCCAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCACTACTGTGGCGAGTTTGACAATGCTGGC  
GCCATGATGAGTGTGGACGAGACCCTCATGTGCTCTTTCAGATCCTCAAGCCCGCCGACAAGAACAAGG  
GGAAGTACGGGCAGTTCAAGTGGCTGAACCTGGAGGCCGACCCATCACCCACCCCGCAATTCCGCCAA  
AGCCAAGAAATAG

Human PPP1CA mRNA sequence - var8 (public gi: 190515) (SEQ ID NO: 108)  
GGGCAAGGAGCTGCTGGCTGGACGGCGGCATGTCCGACAGCGAGAAGCTCAACCTGGACTCGATCATCGG  
GCGCCTGCTGGAAGTGCAGGGCTCGCGGCCCTGGCAAGAATGTACAGCTGACAGAGAACGAGATCCGCGGT  
CTGTGCTGAAATCCCGGGAGATTTTTCTGAGCCAGCCCATCTTCTGGAGCTGGAGGCACCCCTCAAGA  
TCTGCGGTGACATACACGGCCAGTACTACGACCTTCTGCGACTATTTGAGTATGGCGGTTTCCCTCCCGA  
GAGCAACTACCTCTTCTGGGGACTATGTGGACAGGGGCAAGCAGTCTTGGAGACCATCTGCCTGCTG  
CTGGCCTATAAGATCAAGTACCCCGAGAATCTTCTGCTGCTCCGTGGGAACCAAGTGTGCCAGCATCA  
ACCGCATCTATGGTTTCTACGATGAGTGAAGAGACGCTACAACATCAAACCTGTGGAAAACCTTCACTGA  
CTGCTTCAACTGCCTGCCATCGCGGCCATAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCC  
CCGGACCTGCAGTCTATGGAGCAGATTCCGGCGATCATGCGGCCACAGATGTGCCTGACCAGGGCCTGC  
TGTGTGACCTGCTGTGGTCTGACCTGACAAGGACGTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTC  
TTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCTTCCACAAGCAGACTTGGACCTCATCTGCCGAGCA  
CACCAGGTGGTAGAAGACGGCTATGAGTTCTTTGCCAAGCGGCAGCTGGTGAACACTTTCTCAGCTCCCA  
ACTACTGTGGCGAGTTTGACAATGCTGGCGCCATGATGAGTGTGGACGAGACCCTCATGTGCTCTTTCCA  
GATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGTACGGGCAGTTCAAGTGGCCTGAACCTGGAGGCCGA  
CCCATCACCCCAACCCGCAATTCGCCAAAGCCAAGAATAGCCCCCGCACACCCTGTGCCCCAGAT  
GATGGATTGATTGTACAGAAATCATGTGCCATGCTGGGGGGGGTCAACCCGACCCCTAAGGCCACCT  
GTCAGGGGAACATGGAGCCTTGGTGTATTTTTCTTTCTTTTAAATGAATCAATAGCAGCGTCCAGT  
CCCCCAGGGCTGCTTCTGCTGCCTGCACCTGCGGTACTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCA  
GGGCAACGGCAGGCCAGGTCTGGGTCTCCAGCCGTCTTGGCCTCAGGCTGGCAGCCCGGATCCTGGG  
CAACCCATCTGGTCTCTTGAATAAAGGTCAAAGCTGG

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Human PPP1CA mRNA sequence - var9 (public gi: 190280) (SEQ ID NO: 109)  
 CGGCCTGGCAAGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGGAGATTT  
 TTCTGAGCCAGCCCATTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTA  
 CTACGACCTTCTGCGACTATTGAGTATGGAGGTTTCCCTCCCGAGAGCAACTACCTCTTTCTGGGGGAC  
 TATGTGGACAGGGGCAAGCAGTCCTTGGAGACCATCTGCCTGCTGCTGGCCTATAAGATCAAGTACCCCG  
 AGAACTTCTTCTGCTCCGTGGGAACACGAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGA  
 GTGCAAGAGACGCTACAACATCAAACCTGTGGAAAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCG  
 GCCATAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCTGTCCCGGACCTGCAGTCTATGGAGCAGA  
 TTCGGCGGATCATGCGGCCACAGATGTGCCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCC  
 TGACAAGGACGTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTG  
 GCCAAGTTCCTCCACAAGCAGCACTTGGACCTCATCTGCCGAGCACACCAGGTGGTAGAAGACGGCTACG  
 AGTTCTTTTGGCAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCAACTACTGTGGCGAGTTTGACAATGC  
 TGGCGCCATGATGAGTGTGGACGAGACCCTCATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAAC  
 AAGGGGAAGTACGGGCAGTTCAGTGGCCTGAACCCTGGAGGCCGACCCATCACCCACCCCGCAATCCG  
 CCAAAGCCAAGAAATAGCCCCCGACACCACCTGTGCCCCAGATGATGGATTGATTGTACAGAAATCAT  
 GCTGCCATGCTGGGGGGGGTCAACCCGACCCCTCAGGCCACCTGTACGGGGAACATGGACCTTGGTG  
 TATTTTCTTTCTTTTAAATGAATCAG

Human PPP1CA protein sequence - var1 (public gi: 298964) (SEQ ID NO: 261)  
 MSDSEKLNLDISIIGRLLEGSRLVTPHCAVPQGSRPQKQVLTENEIRGLCLKSREIFLSQPILLELEAPL  
 KICGDIHQYQYDILLRLFEYGGFPPESSNYLFLGDYVDRGKQSLKETICLLLAYKIKYPENFFLLRGNHECAS  
 INRIYGFYDECKRRYNIKLWKTFTDCFNCLPIAAIVDEKIFCCHGGLSPDLQSMQIRIRMRPTDVPDQG  
 LLCDLLWSDPKDQVQGWGENDRGVSFTFGAEVVAFLHKLHDLICRAHQVVEDGYEFFAKRQLVTLFSA  
 PNYCGEFDNAGAMMSVDETLMCSFQILKPADKNKGKYGFSGLNPGGRPITPPRNSAKAKK

Human PPP1CA protein sequence - var2 (public gi: 190516) (SEQ ID NO: 262)  
 MSDSEKLNLDISIIGRLLEVQGSRPQKQVLTENEIRGLCLKSREIFLSQPILLELEAPLKIICGDIHQYQY  
 DILLRLFEYGGFPPESSNYLFLGDYVDRGKQSLKETICLLLAYKIKYPENFFLLRGNHECASINRIYGFYDEC  
 KRRYNIKLWKTFTDCFNCLPIAAIVDEKIFCCHGGLSPDLQSMQIRIRMRPTDVPDQGLLCDLLWSDPD  
 KDVQGWGENDRGVSFTFGAEVVAFLHKLHDLICRAHQVVEDGYEFFAKRQLVTLFSAAPNYCGEFDNAG  
 AMMSVDETLMCSFQILKPADKNKGKYGFSGLNPGGRPITPPRNSAKAKK

Human PPP1CA protein sequence - var3 (public gi: 190281) (SEQ ID NO: 263)  
 RPGKNVQLTENEIRGLCLKSREIFLSQPILLELEAPLKIICGDIHQYQYDILLRLFEYGGFPPESSNYLFLGD  
 YVDRGKQSLKETICLLLAYKIKYPENFFLLRGNHECASINRIYGFYDECKRRYNIKLWKTFTDCFNCLPIA  
 AIVDEKIFCCHGGLSPDLQSMQIRIRMRPTDVPDQGLLCDLLWSDPKDQVQGWGENDRGVSFTFGAEV  
 AKFLHKLHDLICRAHQVVEDGYEFFAKRQLVTLFSAAPNYCGEFDNAGAMMSVDETLMCSFQILKPADKN  
 KGKYGFSGLNPGGRPITPPRNSAKAKK

Human PPP1CA protein sequence - (public gi: 35451) (SEQ ID NO: 395)  
 MSDSEKLNLDISIIGRLLEVQGSRPQKQVLTENEIRGLCLKSREIFLSQPILLELEAPLKIICGDIHQYQY  
 DILLRLFEYGGFPPESSNYLFLGDYVDRGKQSLKETICLLLAYKIKYPENFFLLRGNHECASINRIYGFYDEC  
 KRRYNIKLWKTFTDCFNCLPIAAIVDEKIFCCHGGLSPDLQSMQIRIRMRPTDVPDQGLLCDLLWSDPD  
 KDVQGWGENDRGVSFTFGAEVVAFLHKLHDLICRAHQVVEDGYEFFAKRQLVTLFSAAPNYCGEFDNAG  
 AMMSVDETLMCSFQILKPADKNKGKYGFSGLNPGGRPITPPRNSAKAKK

Human PPP1CA pray sequence - var1 (SEQ ID NO: 110)  
 CCGCCTGGTNTACCCATGACNACNTACCANTATTACGTCTACATATGGCTCATGGCAGGCCAGTTGAA  
 ATTCCACACACAATAAGTGCCTCATCGACACGAGAAGAAGGNCATTTGNTTGNGNAACCTNATTA  
 TAGGGCNAGNGCCCCNTGGANTTCCNNTACAACNTNCCAGGATNACGCTCATATGGCCATGGAGGCCAG  
 TGAATTCACCCCAAGCGGTGGTATCAACGCACAGTGGCCATTATGGCGGGCAGTGGCCANAACCTGGAG  
 GCCGACCCATCACCCACCCGCAATTCGCCAAAGCCAAGAAATAGNNGGCGCACACCACCTGTGCCT  
 TNNATGATGGATTGATTGTACAGAAATCATGCTGCCATGCTGGGGGGGGG

Unigene Name: PRKAR1A Unigene ID: Hs.280342

Human PRKAR1A mRNA sequence - var1 (public gi: 34530409) (SEQ ID NO: 111)  
 ATCGCAGAGTGGAGCGGGGCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCGCCGCTCGCACCCGCA

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GCCTCGCGCCCGCCGCGCCCGTCCCCAGAGAACCATTGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGC  
 ACCGAGCCTTCGAGAATGTGAGCTTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATT  
 GTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCCTCAGGGAATACTTTGAGAGGAGGAGGC  
 AAAACAGATTCAAGATCTGCAGAAAGCAGGCACCTCGTACAGACTCAAGGGAGGATGAGATTTCTCTCCF  
 CCACCCAACCCAGTGGTTAAAGGTAGGAGGCGACGAGGTGCTATCAGCGCTGAGGTCTACACGGAGGAAG  
 ATGCGGCATCTTATGTTAGAAAGGTTATACCAAAGATTACAAGACAATGGCCGCTTTAGCCAAAGCCAT  
 TGAAAAGAATGTGCTGTTTTACATCTTGATGATAATGAGAGAAGTGATATTTTGTATGCCATGTTTTCG  
 GTCTCCTTTATCGCAGGAGAGACTGTGATTAGCAAGGTGATGAAGGGGATAACTTCTATGTGATTGATC  
 AAGGAGAGACGGATGTCTATGTTAACAATGAATGGGCAACCAGTGTGGGGAAGGAGGGAGCTTTGGAGA  
 ACTTGCTTTGATTATGGAACACCAGAGCAGCCACTGTCAAAGCAAAGACAATGTGAAATTGTGGGGC  
 ATCGACCGAGACAGCTATAGAAGAATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTATGAGGAAT  
 TCCTTAGTAAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGTCTTACGGTAGCTGATGCATTGGA  
 ACCAGTGCAGTTTGAAGATGGGCAGAAGATTGTGGTGCAAGGAGAACCAGGGGATGAGTTCTTCATTATT  
 TTAGAGGGGTGAGCTGCTGTGCTACAACGTGCGTCAGAAAATGAAGAGTTTGTGAAGTGGGAAGATTGG  
 GGCCTTCTGATTATTTTGGTGAAATTGCACTACTGATGAATCGTCTCGTGTGCCACAGTTGTTGCTCG  
 TGGCCCTTGAAGTGCCTTAAGCTGGACCGACCTAGATTGAACGTGTTCTTGCCCCATGCTCAGACATC  
 CTCAAACGAAACATCCAGCAGTACAACAGTTTTGTGTCACTGTCTGTCTGAAATCTGCCTCCTGCGCTC  
 CCTTTCTCCTTCCCCAATCCATGCTTCACTCATGCAAACTGCTTTATTTTCCCTACTTGCAGCGCCAA  
 GTGGCCACTGGCATCGCAGCTTCTGTCTGTTTATATATTGAAAGTTGCTTTTATTGCACCATTTTCAAT  
 TTGGAGCATTAACTAAATGCTCATACACAGTTAAATAAATAGAAAGAGTTCTATGGAGACTTTGCTGTTA  
 CTGCTTCTCTTTGTGCACTGTTAGTATTACCCCTGGGCAGTGAGTGCCATGCTTTTGGTGAGGGCAGAT  
 CCCAGCCTTATTGAATTACCATAGAGTAATGATGTAACAGTGAAGATTTTCTTTTAAAGTGACATAA  
 TTGTCAGTTTAAAGCGTATTAGACTGTGGCCATATGCTGTATTTCTTTGTAGAATAAATGGTTTCT  
 CATTAACTCTAAAGATTAGGGAAAATGGATATAGAAAATCTTAGTATAGTAGAAAGACATCTGCCTGTA  
 ATTAAGTATTAAAGGTGGAAAAATGCCCATTTTTGCTAATTATCAATGGGATATGATTGGTTCAGTT  
 TTTTTTTTTTCCAGAGTTGTTGTTGCCAAGCTAATCTGCCTGGTTTTATTATATCTTGTATTAAATG  
 TTTCTTCTCAATCTGAAATACCTTTGAGTATGGCTATCTATACCTGCCTTTAAGTTTGAAACTAACT  
 CATAGATTGCAAAATATTGGTTAGTATTTAACACTACTGCCTCGGCTCACAAATCCGATTAGACCTTTA  
 TCCAGCTAGTGCCAAATAATTGATCAGATGCTGAATTGAGAATAAGAATTGAGGTCTACATTCTTGGTT  
 GTTAATTTAGAGCGTTTGGTTAAAGTATGTCCTTCAGCTGACTCCAGTATAATCTCCTCTGCTCATTAAA  
 CTGATTCCAGGAGATTGGATTTGCTGTGACTAGATACAGATGGAGCAAATGTCTAACAGAGAAATAGAG  
 GTGATGCTGCTAAAGGGAGAAATGCCAGGCGGACAAAGTTCAGTGTGCGGAAATTTCCCGGTGACATTCA  
 CTGGGGCATGAGATTTTGAAGAAGTTTCTTACTTTGGTTAGTCTTTTTTCTTCTTCTTTTCTTTTCA  
 TAGAATTTCTGTGGGTTGATGGTAGGGTATAATGTGTCTGTGTTGCTTCAAATTTGGTCTGAAAGGCTAT  
 CCTGCTGAAAGTCTGCTTTTCTATCTAGCATTATTTCTCTGCGCAAACCTTTTCTTTCTTTTCTTTTFA  
 AAGTAACTTGTGATTAGTCTTAACTGTATTTTCAGTATTTTCAGCCTTATGTGTTACATTATCCAA  
 TGATACCCAACAGTTTATTTTTATTTTAAACAAAATTTTACAGTTCTGTAATGTAGGCATTTT  
 ATTTTCATTGTGATTATATATAAGGTAATGTAGGGTTATATTTGGGAGTGACTGCAAGCATTTTTCCAT  
 CTGTGTGCAACTAACTGACTCTGTTATTGATCCCTTCTCTGCCCTTTCCAGGTAATTTAAATTTGGTCA  
 TGGTAGATTTTTTTCATAGATTGAAAAACTTTTAGGTTGTTACCAAGTATGAAGTATAAATCTGGGGAA  
 GAGGTTTTATTACATTTTAGGGTGGTAAGAAAGCCACCTTGTACAAATTTTAAATTTCCAAAATAA  
 TCTATATTAATGAGGGTTTCTGATCTGTACTTTGTGTTAGCTACCTTTTTATATTTAAAAAATTA  
 ATGAAAATTATGTTCTTACAAGCTTAAAGCTTGATTGATCTTTGTTTAAATGCCAAAATGTACTTAAAT  
 GAGTTACTTAGAATGCCATAAAATTCAGTTTCATGTATGTATATAATCATGCTCATGTATATTTAGTTA  
 CGTATAATGCTTTCTGAGTGAGTTTTACTCTTAAATCATTTGGTTAAATCATTTGGCTTGCTGTTTACTC  
 CCTTCTGTAGTTTTTAATTAAGCTTTAAAGATAAGTCTACATTAAACAATGATCACATCTAAAGCTTT  
 ATCTTTGTGTAATCTAAGTATATGTGAGAAATCAGAAATGGCATAATTTGTCTTAGTTGATATTCAGGC  
 TTTAAAGTCATTATCTGGGCTTGTAAGTGAATTTATGAGATTTACTGCTCTAGAAAGTATAGATGG  
 CCAAAGGACCGTTTTGTATTGCTTCTGATTACCAAGTCTGATTATACCATGTGTGCTAATATACCTTTTT  
 TGTTATAGATTGCTTAAATGGTAGGTCAAGTAATAAAAGAGATGAAATAATTT

Human PRKAR1A mRNA sequence - var2 (public gi: 4884279) (SEQ ID NO: 112)

TATTTTCCAGCCTATGTGTTACATTATTCCAATGATACCCAACAGTTTATTTTATTATTTTTTAAAC  
 AAAATTTACAGTTCTGTAATGTAGGCATTTTATTTTCATTGTGATTTATATATAAGGTAATGTAGGGT  
 TATATTTGGGAGTGACTGCAAGCATTTTCCATCTGTGTGCAACTAAGTACTGCTGTTATTGATCCCTTC  
 TCCTGCCCTTTCCAGGTAATTTAAATTTGGTCACTGTTAGATTTTTTTCATAGATTTGAAAAACTTTTAGG  
 TTGTTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTTATTTACATTTTAGGGTGGGTAAGAAAGCC  
 ACCTTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAATGAGGGTTTCTGATCTGTACTTTGTG  
 TTTAGCTACCTTTTTATATTTAAAAAATAAAAATGAAATACGTTCTTACAAGCTTAAAGCTTGATT  
 GATCTTTGTTTAAATGCCAAAATGTACTTAAATGAGTTACTTAGAATGCCATAAAATGCAGTTTTCATGT  
 ATGTATATAATCATGCTCATGTATATTTAGTTACGTATATGCTTTCTGAGTGAGTTTTACTCTTAAATC  
 ATTTGGTTAAATCATTTGGCTTGCTGTTTACTCCCTTCTGTAGTTTTTAATTAAGGATAAG  
 TCTACATTAAACAATGATCACATCTAAAGCTTTATCTTTGTGTAATCTAAGTATATGTGAGAAATCAGAA

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TTGGCATAATTTGTCTTAGTTGATATTCAAGGCTTTAAAAGTCATTATTCTGGGCTTGGTAAGTGAATT  
TATGAGATTTACTGCTCTAGAAAAGTATAGATGGCCAAAGGACCGTTATGTATTGCTTCCTGATTACCACT  
CTGATTATACCATGTGTGCTAATATACTTTTTTTGTTATAGATTGTCTTAATGGTAGGTCAAGTAATAAAA  
AAGAGATGAAATAATTTAAAAA

Human PRKAR1A mRNA sequence - var3 (public gi: 33636720) (SEQ ID NO: 113)

GGTGGAGCTGTGCGCTAGCCGCTATCGCAGAGTGGAGCGGGGCTGGGAGCAAAGCGCTGAGGGAGCTCGG  
TACGCCGCCGCTCGCACCAGCAGCTCGCGCCCGCCCGCCCGTCCCCAGAGAACCATGGAGTCTGGC  
AGTACCGCCGCGAGTGAGGAGGCACGACGCTTCGAGAATGTGAGCTCTACGTCCAGAAGCAATCATT  
AAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCTCAG  
GGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTGAGAATCTGCAGAAAGCAGGCACCTCGT  
ACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCAACCCAGTGGTTAAAGGTAGGAGGCGACGAG  
GTGCTATCAGCGCTGAGGTTCTACACGGAGGAAGATGCGGCATCCTATGTTAGAAAGGTTATACCAAAAGA  
TTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAAAGAATGTGCTGTTTACATCTTGATGATAAT  
GAGAGAAGTGATATTTTTGATGCCATGTTTTCGGTCTCCTTTATCGCAGGAGAGACTGTGATTGAGCAAG  
GTGATGAAGGGGATAAATTCTATGTGATTGATCAAGGAGAGACGGATGTCTATGTTAACAATGAATGGGC  
AACCAGTGTGGGGAAGGAGGAGCTTTGGGAGAACTTGCTTTGATTATGGAACACCGAGAGCAGCCACT  
GTCAAAGCAAAGACAATGTGAAATTTGGGGCATCGACCGAGACAGCTATAGAAGAATCCTCATGGGAA  
GCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTAGTAAAGTCTCTATTTTAGAGTCTCTGGACAA  
GTGGGAACGTCTTACGGTAGCTGATGCATTGGAACCTGTCAGTTTGAAGATGGGCAGAAAGATTGGTG  
CAGGGAGAACCAGGGGATGAGTCTTCTATTATTTTAGAGGGGTGAGCTGCTGTGCTACAACGTCGGTCAG  
AAAATGAAGAGTTTGTGTAAGTGGGAAGATTGGGGCCTTCTGATTATTTGGTGAAATGCACTACTGAT  
GAATCGTCTCGTGCTGCCACAGTTGTTGCTCGTGGCCCTTGAAGTGCCTTAAGCTGGACCGACCTAGA  
TTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAAACGAAACATCCAGCAGTACAACAGTTTGTGT  
CACTGTCTGTCTGAAATCTGCCTCCTGTGCCTCCCTTTCTCCTCTCCCAATCCATGCTTCACTCATGC  
AACTGCTTTATTTTCCCTACTTGCAGCGCCAAGTGGCCACTGGCATCGCAGCTTCTGTCTGTTTATAT  
ATTGAAAGTTGCTTTTATTGCAACATTTTCAATTTGGAGCATTAACTAAATGCTCATACACAGTTAAATA  
AATAGAAAGAGTTCTATGGGAGACTTTGCTGTTACTGCTTCTCTTTGTGCAGTGTAGTATTCAACCTGGG  
CAGTGAGTGCCATGCTTTTGGTGAGGGCAGATCCAGCAGCTATTGAATTACCATAGAGTAATGATGTA  
ACAGTGAAGATTTTTTTTAAAGTGACATAAATTGTCAGTTATAAGCGTATTTAGACTGTGGCCATATA  
TGCTGTATTTCTTTGTAGAATAAATGGTTTCTCATTAACCTCTAAAGATTAGGGAAAATGGATATAGAAA  
ATCTTAGTATAGTAGAAAGACATCTGCCTGTAATTAAGTAGTTTAAAGGTGGAAAATGCCATTTTTG  
CTAATTATCAATGGGATATGATTGGTTTCAGTTTTTTTTTCCAGAGTTGTTGTTTGGCAAGCTAATCTG  
CCTGGTTTTATTATATCTTGTATTAAATGTTTCTCTCAATTCTGAAATACTTTTGGATATGGCTATC  
TATACCTGCCTTTTAAAGTTTGAAACTAACTCATAGATTGCAAAATATTGGTTAGTATTAACTATGCTC  
CTCGGCTCACAATTTCCGATTAGACCTTTATCCAGCTAGTGCCAAATAATTGATCAGATGCTGAATTGAG  
AATAAGAATTTGAGGTCTACATTCTTGGTTGTTAATTTAGAGCGTTTGGTTAAAGTATGCTCTTCAGCTG  
ACTCCAGTATAATCTCCTCTGCTCATTAACCTGATTCCAGGAGATTGGATTGCTGTGACTAGATACAGA  
TGGAGCAAATGTCCTAACAGAGAAATAGAGGTGATGCTGCTAAAGGGAGAAATGCCAGGCGGACAAAGTT  
CAGTGTGCGGAATTTTCCCGTGACATTCACTGGGGCATGAGATTTGGAAGAAGTTTTTACTTTGGTT  
TAGTCTTTTTTCCCTCCTTTTTATTACAGCTAGAATTTCTGGTGGTTGATGGTAGGGTATAATGTGTCT  
GTGTTGCTTCAAATTTGGTCTGAAAGGCTATCCTGCGGAAAGTCTGCTTTCTATCTAGCATTATTTCT  
CTGGCAAACTTTTCTTTCTTTTTTAAAGTAACTTGTGTATTGAGTCTTAACTGTATTTTCAGTAT  
TTTCCAGCCTTATGTGTTACATTATTTCAATGATACCAACAGTTTATTTTTATTTTAAACAAA  
ATTTACAGTTCTGTAATGTAGGCACTTTTATTTTTCATTGTGATTATATATAAGGTAATGTAGGGTTAT  
ATTTGGGAGTGACTGCAAGCATTTTCCATCTGTGTGCAACTAACTGACTCTGTTATTGATCCCTTCTCC  
TGCCCTTTCCAGGTAATTTAAATTGGTCATGGTAGATTTTTTTCATAGATTGAAAACTTTTAGGTTG  
TTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTTATTTACATTTTAGGGTGGTAAGAAAGCCACC  
TTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAATGAGGGTTTCTGATCTGACTTTGTGTTT  
AGCTACCTTTTTTATATTTAAAAAATTAATAATGAAATACGTTCTTACAAGCTTAAAGCTTGATTGAT  
CTTTGTTTAAATGCCAAAATGTACTTAAATGAGTTACTTAGAATGCCATAAAATTCAGTCTTCATGTATG  
TATATAATCATGCTCATGTATATTTAGTTACGTATAATGCTTTCTGAGTGAGTTTACTCTTAAATCATT  
TGTTTAAATCATTTGGCTTGCTGTTTACTCCCTTCTGTAGTTTAAATTAATAAAGCTTAAAGATAAGTCT  
ACATTAAACAATGATCACATCTAAAGCTTTATCTTTGTGTAATCTAAGTATATGTGAGAAATCAGAATTG  
GCATAATTTGCTTAGTTGATATTCAAGGCTTTAAAGTCAATTATCTGGGCTTGGTAAGTGAATTTAT  
GAGATTTACTGCTCTAGAAAAGTATAGATGCGGAAAGGACCGTTTGTATTGCTTCTGATTACCACTG  
ATTATACCATGTGTGCTAATATACTTTTTTTGTTATAGATTGTCTTAATGGTAGGTCAAGTAATAAAAAA  
AGATGAAATAATTTAAAAA

Human PRKAR1A mRNA sequence - var4 (public gi: 1526989) (SEQ ID NO: 114)

GCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCGCCGCTCGCACCAGCAGCTCGCGCCCGCCCGC  
CCCGTCCCCAGAGAACCATGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCACGACGCTTCGAGAATG

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TGAGCTCTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCT  
CGACCTGAGAGACCCATGGCATTCTCTCAGGGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGA  
TTCAGAATCTGCAGAAAGCAGGCACCTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCTCCACCCAA  
CCCACTGGTTAAAGGTAGGAGCGACGAGGTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCA  
TCCTATGTTAGAAAGGTTATACCAAAGATTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAAAGA  
ATGTGCTGTTTTACATCTTGATGATAATGAGAGAAGTGATATTTTGTATGCCATGTTTTCGGTCTCCTT  
TATCGCAGGAGAGACTGTGATTGAGCAAGGTGATGAAGGGGATAACTTCTATGTGATTGATCAAGGAGAG  
ACGGATGTCTATGTTAAACATGAATGGGCAACCACTGTTGGGGAAGGAGGAGCTTTGGAGAAGCTTGCTT  
TGATTTATGGAAACCCGAGAGCAGCCACTGTCAAAGCAAAGACAAATGTGAAATTGTGGGGCATCGACCG  
AGACAGCTATAGAAGAATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTAGT  
AAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGTCTTACGGTAGCTGATGCATTGGAACCACTGC  
AGTTTGAAGATGGGCAGAAAGATTGTGGTGCAGGGAGAACCAGGGGATGAGTTCTTCATTATTTTAGAGGG  
GTCAGCTGCTGTGCTACAACGTGGTGCAGAAAATGAAGAGTTTGTGAAGTGGGAAGATTGGGGCCTTCT  
GATTATTTTGGTGAAATTGCACTACTGATGAATCGTCTCGTCTGCCACAGTTGTTGCTCGTGGCCCCCT  
TGAAGTGGCTTAAGCTGGACCGACCTAGATTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAAACG  
AAACATCCAGCAGTACAACAGTTTTGTGTCACTGTCTGTCTGAAATCTGCCTCCTGTGCCTCCCTTTTCT  
CCTCTCCCAATCCATGCTTCACTCATGCAAACTGCTTTATTTTCCCTACTTGCAGCGCAAGTGGCCAC  
TGGCATCGCAGCTTCTGTCTGTTTATATATTGAAGTTGCTTTTATTCACCATTTTCAATTTGGAGCA  
TTAACTAAATGCTCATACACAGTTAAATAAATAGAAAGAGTTCTATGGAGACTTTGCTGTTACTGCTTCT  
CTTTGTGCACTGTTAGTATTACCCCTGGGCAGTGAGTGCCATGCTTTTGGTGAGGGCAGATCCAACACC  
TATTGAATTACCATAGAGTAATGATGTAACAGTGCAAGATTTTTTTTTTAAAGTGACATAATTGTCCAGT  
TATAAGCGTATTTAGACTGTGGCCATATATGCTGATTTCTTTGTAGAATAAATGGTTTCTCATTAACCT  
CTAAAGATTAGGGAATGGATATAGAAAATCTTAGTATAGTAAAGACATCTGCCTGTAATTAACCTAG  
TTTAAAGGTTGAAAAATGAAATTTTTGCTAATTATCAATGGGATATGATTGGTTCACTTTTTTTTTTCC  
AGAGTTGTTGTTTGCCAAGCTAATCTGCCTGGTTTATTTATATCTTGTATTAAATGTTTCTCTCCAATT  
CTGAAATACTTTTGAATATGGCTATCTATACCTGCCTTTTAAAGTTTGAAGTAACCTCATAGATGCAATA  
TTGGTTAGTATTTAACTACATCTGCCTCGGCTCACAATTCGGATTAGACCTTTATCCAGCTAGTGCCAA  
ATAATTGATCAGATGCTGAATTGAGAATAAGAATTTAGAGTCTACATCTTGGTTGTTAATTTAGAGCGT  
TTGGTTAAAGTATGCTTCACTGACTCCAGTATAATCTCCTCTGCTCATTAACTGATTCCAGGAGAT  
TGGATTTGCTGTGACTAGATACAGATGGAGCAATGTCTAACAGAGAAATAGAGGTGATGCTGCTAAAG  
GGAGAAATGCCAGGCGGACAAAGTTCACTGTCGGGAATTTTCCCGTGACATTCACTGGGGCATGAGATT  
TTGGAAGAAGTTTTTTTACTTTGGTTTAGTCTTTTTTCTCCTCTTTTATTCACTAGAAATTTCTGGTGGG  
TTGATGGTAGGGTATAATGTGTCTGTGTTGCTTCAAATGGTCTGAAAGGCTATCTGCTGAAAGTCTCTG  
CTTTCTTATCTAGCATTTTATCTCTGGCAAACTTTTCTTTCTTTCTTTTTTAAAGTAAACTTGTGTAT  
TGAGTCTTAACTGTATTTCACTATTTTCCAGCCTTATGTGTTACATTATTCCAATGATACCCAACAGTTT  
ATTTTTATTATTTTTTAAACAAATTTTCACTGTTCTGTAATGTAGGCATTTTATTTTCAATTGTGATTT  
ATATATAAGGTAATGTAGGTTATATTTGGGAGTGACTGCAAGCATTTTTCATCTGTGTGCAACTAAT  
GACTCTGTATTGATCCCTTCTCCTGCCCTTTCCAGGTAATTTAAATTTGGTCTAGGTAGATTTTTTCA  
TAGATTGAAAATCTTTAGGTTGTTACCAAGTATAGAAGTATAAATCTGGGGAAGAGGTTTATTTTACAT  
TTTAGGGTGGGTAAGAAAGCCACCTTGTACAAATTTTTTAAATTTCCAAAATAATCTATATTAAATGAGG  
GTTTCTGATCTGTACTTTGTGTTAGCTACCTTTTATATTTAAAAAATTAATAATGAAATATGTTCT  
TACAAGCTTAAAGCTTGATTGATCT

Human PRKAR1A mRNA sequence - var5 (public gi: 1526988) (SEQ ID NO: 115)

GGCAGAGTGGAGCGGGCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCGCCGCTCGCACCCGAGC  
CTCGCGCCCGCCGCGCCCGTCCCCAGAGAACCATGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCAC  
GCAGCCTTCGAGAATGTGAGCTCTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGT  
GCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCTCTCAGGGAATACTTTGAGAGGTTGGAGAAG  
GAGGAGGCAAAACAGATTGAGAATCTGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTT  
CTCCTCCTCCACCCAACCCAGTGGTTAAAGGTAGGAGGCGACGAGGTGCTATCAGCGCTGAGGTCTACAC  
GGAGGAAGATGCGGCATCCTATGTTAGAAAGGTTATACCAAAGATTACAAGACAATGGCCGCTTTAGCC  
AAAGCCATTGAAAAGAATGTGCTGTTTTACATCTTGATGATAATGAGAGAAGTGATTTTTTGTATGCCA  
TGTTTTCGGTCTCCTTTATCGCAGGAGAGACTGTGATTGAGCAAGGTGATGAAGGGGATAACTTCTATGT  
GATTGATCAAGGAGAGACGGATGTCTATGTTAAACATGAATGGGCAACCAGTGTGGGGAAGGAGGGAGC  
TTTGGAGAAGTTGCTTTGATTTATGGAACACCGAGAGCAGCCACTGTCAAAGCAAAGACAAATGTGAAAT  
TGTGGGGCATCGACCGAGACAGCTATAGAAGATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTA  
TGAGGAATTCCTTAGTAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGTCTTACGGTAGCTGAT  
GCATTGGAACCACTGTCAGTTTGAAGATGGGCAGAAGATTGTGGTGCAGGGAGAACCAGGGGATGAGTTCT  
TCATTATTTTAGAGGGGTGAGCTGCTGTGCTACAACGTGGTGCAGAAAATGAAGAGTTTGTGTAAGTGGG  
AAGATTGGGGCCTTCTGATTATTTTGGTGAATTTGCACTACTGATGAATCGTCTCGTCTGCCACAGTT  
GTTGCTCGTGGCCCTTGAAGTGGTGAAGTGGACCGACCTAGATTGAACGTGTTCTTGGCCCATGCT  
CAGACATCCTCAAACGAAACATCCAGCAGTACACAGCTTTTGTGTCACTGTCTGTGAAATCTGCCTCC  
TGTGCCTCCCTTTTCTCCTCTCCCAATCCATGCTTCACTCATGCAAACTGCTTTATTTTCCCTACTTGC

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AGCGCCAAGTGGCCACTGGCATCGCAGCTTCCTGTCTGTTTATATATTAAAGTTGCTTTTATTGCACCAT  
TTTCAATTTGGAGCATTAACTAAATGCTCATACAGTTAAATAAATAGAAAGAGTTCTATGGAAAAAA  
AAAAAA

Human PRKAR1A mRNA sequence - var6 (public gi: 9956010) (SEQ ID NO: 116)

AACTGACTCTGTTATTGATCCCTTCTCCTGCCCTTTCCCAGGTAATTTAAATTGGTCATGGTAGATTTT  
TTCATAGATTGAAAAACTTTTAGGTGTTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTTATT  
ACATTTTAGGGTGGGTAAGAAAGCCACCTTGTACAAATTTTAAATTTCCAAAATAATCTATATTAAAT  
GAGGGTTCTGATCTGACTTTGATTTGATCTTTGTTTAAATGCCAAATGTACTTAAATGAGTTACTTAGA  
TTCTTACAAGCTTAAAGCTTGATTTGATCTTTGTTTAAATGCCAAATGTACTTAAATGAGTTACTTAGA  
ATGCCATAAAATTGCAGTTTCATGTATGTATATAATCATGCTCATGTATATTAGTTACGTATAATGCTT  
TCTGAGTGAGTTTACTCTTAAATCATTTGGTTAAATCATTTGGCTTGCTGTTTACTCCCTTCTGTAGTT  
TTTAATTAAAACTTTAAAGATAAGTCTACATTAAACAATGATCACATCTAAAGCTTTATCTTTGTGTAA  
TCTAAGTATCTGAGAAATCAGAATTGGCATAAATTTGTCTTAGTTGATATTCAAGGCTTTAAAGTCAT  
TATTCCTGGGCTGGTAAGTGAATTTATGAGATTACTGCTCTAGAAAGTATAGATGGCCAAAGGACCGT  
TTTGTATTGCTTCTGATTACCAGTCTGATTATACCATGTGTGCTAATATACTTTTTTTGTTATAGATTG  
TCTTAATGGTAGGTCAAGTAATAAAAGAGATGAAATAATTTAAATCTTAAATGAATCAGTTTTTCTTC  
CCTTCTCCTTTCCGCTCTTCCCTCTCTCTGCTCTTCCCCGAAAGTCTACTCGGGTGGGCAAAATGAAAA  
GGGGAAAGTGAATTATGGGATCGGTGTTTTGAAAGAGCAATGTTTATTTTTCAGTGCTTTTCAGTTTGTC  
AAAGAGTGGATCTCAAAATCTTGCTTAAAGGGTAATTGAGATGTAGCAGATTATTTACTTAGTCATGGA  
AAGAAAAAATTCAGTCAAAAGCTAAAGATTTCCCTTTTGATTGAAGACAGATTGGTTCTGTGGCCTTGA  
ACTTTCCAGACTTAATGGGGAACATCATTTCTAGATTAGCATACTCTTTGGTTTAAATTTAATATATA  
CATTTAATGTTACTTAGGGATACTTTTATATTTTGCATATATAAGCCTCATATATAAGCCTTATTTCT  
GATGCTCTTAGATTCTGAGGAGTGAGATGATTAGTGTATTTCATTAGTGTATTGGTATTTCTTCACAT  
CCAGTGAAATTGGAGATATGTTGATGTTAGAAGGACATTCTTAAATTGTGTTGCTTTGAACATGTGTA  
CCTTTTCTAGATTTCAGTAATCCCTTCCCCCGTCTCTGGAGTATGAAACCTTTAGAGTCACAATAAAAT  
GTAATAAGAAAAA

Human PRKAR1A mRNA sequence - var7 (public gi: 21757396) (SEQ ID NO: 117)

TAATTTTCTTGTGTTTTTAAAAATTTGATTATGCTAGTAGTTGGCTAATCAGATCCTCACTCCAGTG  
GTTTGCTCTGTGACGTTAGGATACCCATGGGATAGAAGTTACGTATAGGGAATGTCAGATATTCTTCA  
TTGTGCTGACTTGCTTTTCGCTTACAGTTGACTTTTGTGCTTGGTAATTCGTATCCTGTTTACCGTTTA  
CCTACTTCCCAGCTCATCATGATTTCTTTTGGGGAGAACTGAATGAAATTCCTTAAGGCGCTGACTTC  
AGCACCCGCTCTGTCAGAGGTTAGTGGCTCATACTTCTCCAGGAGCTGAGGTTATCGACTCTCACTGT  
TGCCTACAGAGCACAGATCCTGAACTAAATGAAACATTTACTTGAATAATGCTAATTCTGTACATATT  
TATTCCTTAGTCCCCAGTTCCCTGTTTAAAAACAAAATCTACTTAGAAAAAATCCCTGTGAATCAGTTG  
TCTAATGAATTTAGCAAGTTAAATGCCAGATTGACATTTTGCTTTATAGTTTATACAAGCATGTGTGTGT  
TTTTTTCTCGCAGAGAACCATGGAGTCTGGCAGTACCGCCAGTGAGGAGGCACGCAGCCTTCGAGAA  
TGTGAGCTCTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTG  
CTCGACCTGAGAGACCATGGCATTCTCAGGGAATCTTTGAGAGGTTGAGAAGGAGGAGGCAAAACA  
GATTCAGAACTCGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCC  
AACCCAGTGGTTAAAGGTAGGAGCGACGAGGTCTATCAGCGCTGAGGCTACACGGAGGAAGATGCGG  
CATCCTATGTTAGAAAGGTTATACCAAAGATTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAA  
GAATGTGCTGTTTTACATCTTGATGATAATGAGAGAAGTGATATTTTGTATGCCATGTTTTCCGCTCTC  
TTTATCGCAGGAGAGACTGTGATTGAGCAAGGTGATGAAGGGGATAACTTCTATGTGATTGATCAAGGAG  
AGACGGATGTCTATGTTAACAATGAATGGGCAACCACTGTTGGGGAAGGAGGAGCTTTGGAGAAGTTGC  
TTTGATTATGGAACACCGAGAGCAGCCACTGTCAAAGCAAAGACAAATGTGAAATTGTGGGGCATCGAC  
CGAGACAGCTATAGAAGATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTA  
GTAAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGTCTTACGGTAGCTGATGCATTGGAACCA  
GCAGTTTGAAGATGGGCAAGATTGTGGTGCAGGGGAGAACAGGGGATGAGTTCTTCATTATTTAGAG  
GGGTGAGTCTGTGCTACAACGTGCTCAGAAAATGAAGAGTTTGTGTAAGTGGGAAGATTGGGGCCTT  
CTGATTATTTTGGTGAATTGCACTACTGATGAATCGTCTCTGCTGCCACAGTTGTTGCTCGTGGCCC  
CTTGAAGTGCGTTAAGCTGGACCGACCTAGATTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAA  
CGAAACATCCAGCAGTACAACAGTTTTGTGCTACTGTCTGTCTGAAATCCGCCTCCTGTGCTCCCTTTT  
CTCCTCTCCCAATCCATGCTTCACTCATGCAAAGTCTTTATTTTCCCTACTTGCAGCGCCAAGTGGCC  
ACTGGCATCGCAGCTTCTGTCTGTTTATATATTGAAAGTTGCTTTTATTGCACCATTTTCAATTTGGAG  
CATTAATAATGCTCATACAGTTAAATAAATAGAAAGAGTTCTATGG

Human PRKAR1A mRNA sequence - var8 (public gi: 1658305) (SEQ ID NO: 118)

AGAGGCGTCAAGGGAGGCGGAGGGAGAGTGGGGTGGACAGAGGAGCGGAGGGAGGAGGGAAGCGCAC  
GATAGCTGCGCGGAGAGAGAGCGAAGAGCAGGAGGAGGAACAAAGGCGACCCAGACACCCAGAGGGA  
CAGAGAACCATGGAGTCTGGCAGTACCGCCCGCAGTGAGGAGGCACGCAGCCTTCGAGAATGTGAGCTCT

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ACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGA  
GAGACCATGGCATTCTCAGGGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTCAGAAT  
CTGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAA

Human PRKAR1A protein sequence - var1 (public gi: 4506063) (SEQ ID NO: 264)  
MESGSTAASEEARSLRECELYVQKHNIQALLKDSIVQLCTARPERPMAFLREYFERLEKEEAKQIQNLQK  
AGTRTDSREDEISPPPNPVVKGRRRRGAI SAEVYTEEDAASYVRKVIPKDYKTMAALAKAIEKNVLFSH  
LDDNERSDIFDAMFSVSFIAGETVIOQGDGDNFYVIDQGETDVYVNNWATSVEGGSFGEALALIYGT  
RAATVKAKTNVKLWGLDRDSYRRILMGSTLRKRKMYEEFLSKVSILES LDKWERLTVADALEPVQFEDGQ  
KIVVQGEPEGDEFFIILEGSAAVLQRRSENEEFVEVGRGLGPSDYFGEIALLMNRPRATVVARGLKCVKL  
DRPRFERVLGPCSDILKRNIQQYNSFVSLSV

Human PRKAR1A protein sequence - var2 (public gi: 1658306) (SEQ ID NO: 265)  
MESGSTAASEEARSLRECELYVQKHNIQALLKDSIVQLCTARPERPMAFLREYFERLEKEEAKQIQNLQK  
AGTRTDSREDEISPPPP

Human PRKAR1A pray sequence - var1 (SEQ ID NO: 119)  
GCCGCTGGTNTACCCATACGACGTACCAGTATTACGCTCATATGGCCATGGCAGGCCAGTGCAATTCCA  
CCCAAGCAGTGGCTATCAACGCAGAGTGGTAGCGGGGCATGGGAGCAAAGCAGCATGAGGGAGCTCGGTA  
CNCCGCCGCTCNCACCCGCAGCCTCGCGCCCGCCGCCCGCCGTCAGNAGAACCATGGAGTCTGGCAG  
TACCGTTTCCAGTGAGGAGGCACNCAGCCTTCGAGAAATGTGAGCTCTNNGTCCAGAAGCATNACATTCAN  
TGCGCTNCTCAAAGATTCTNTTGTGCANTTGTGCNCTGCTCGACCTNAGAGACCGGGTGGCATTCTCTCAN  
GGAATACTTGGCGNACGNNGNNTAATGANGAGGCCCNNTNTNTNCAAANTCTNCANNTNTNTNNTCTT  
TNACAACTTTTGGACNATNANNANCCNTNNNANANAAANAANAATNNCTTCCCCGGGGNATTCTCT  
NCCC

Human PRKAR1A pray sequence - var2 (SEQ ID NO: 120)  
GAGCGCCGCGCATGGNANTACCCATACGACGTACCAGTATTACGCTCATATGGCCATGGAGGCCAGTGAAT  
TCCACCCAAGCAGTGGTATCAACGCAGAGTGGTAGCGGGGCATGGGAGCAAAGCGCTGAGGGAGCTCGGTA  
CGCCGCCGCTCGCACCCGCAGCCTCGCGCCCGCCGCCCGCCGTCAGAGAACCATGGAGTCTGGCAG  
TACCGCCGCGCATGAGGAGGCACGCAGCCTTCGAGAAATGTGAGCTCTACGTCCAGAAGCATAACATTCAA  
GCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCTCTCAGGG  
AATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTCTGAGAAAGCAGGCACTCGTAC  
AGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAACCCAGTGGTTAAAGGTAGGAGGCGACGAGGT  
GCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCATCCTATGTTAGAAAGGTTATACCAAAGATT  
ACAAGACGATGGCCGCTTTAGCCAAAGCCATTGAAAAGAATGTGCTGTTTTACATCTTGATGATAATGA  
GAGAAGTGATATTTTGATGCCATGTTTTCGGTCTCCTTTATCGCAGGAGAGACTGTGATTCANCAAGGT  
GATGAAGGGGATAACTTCTATGTGATTGATCAAGGANAGACNGATGTCTATGTTAACAATGAATGGGCNA  
CCANTGTTGGGGAAGGAGGAGCTTTGGAAAACCTTGCTTTGATTNANGGAANCCNNNNGCNCNCTNGTC  
AAACCAAAACAAA

Human PRKAR1A pray sequence - var3 (SEQ ID NO: 121)  
CGACGCGCCTGGTATACCCATACGACGTACCAGTATTACGCTCATATGGCCATGGCAGGCCAGTGAATT  
CCACCCAAGCAGGTGCGATATGCATACGCGAGNAGTGAGTAACGGCGGCTGGGTAGCGAAGTCGCTGAGG  
GAGTCTCGGTACNCCGCCAGCGCTCGCACCCGCANCTCGCGCCCGCCGCCCGCTCCCCAGAGAACCAT  
GGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAAATGTGAGCTCTACGTCCAGAAG  
CATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGG  
CATTCTCAGGGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTCTGAGAAAGC  
AGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAACCCAGTGGTTAAAGGTAGG  
AGGCGACGAGGTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCATCCTATGTTAGAAAGGTAG  
TTTTTGATATTTGAATATCGGGGGGATGCTTTNGGGACCCACTTGGTGGTCATCTANTCTCCTTGGATG  
ANTGATTCTTAAATCCAAACNGGGNGGAACCTCATCNNTTNTANANTNNTGGGNNCTGGAAAAANGG  
TTTTTNTAATACNNCTTNNCAANGAAANANCNNTTNGNGTTTNAANNNGGAAAANTGGCTTTNGGGG  
GTTNNNTTTCNCTCNNTNTTTTNNNNAAAAAGGGNGGGGGCGGTTNG

Human PRKAR1A pray sequence - var4 (SEQ ID NO: 122)  
CGTANCNCGCGNACTCGGTGACTGANGCCATGATCGCACATTACACATNTACCGTCTGACATCAT  
GGNTCAGTGTGCAGGGCCATGTTGANNCTCCNCCATANATACAAGGNCCTCAAGNNGNACANAACAAT  
AGAGANATATTTTTANTACTNACTACTATAGGGCGAGCGCCGCTGGAGTACCCATACGACGTNCCAG  
ATTACGCTCATATGGCCATGGAGGCCAGTGAATTCACCCAAGCAGTGGTATCAACGCAGAGTGGAGCGG  
GGCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCCGCCGCTCGCACCCGCAGCCTCGCGCCCGCCGCC

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GCCCGTCCCCAGAGAACCATGGAGTCTGGCNGTACCGCCNNTANTGNGGAGGCACGCAGCCTTNNAGAAT  
 GTGAGCTCTACGTCCAGAAGCATAACATNNGNGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGC  
 TCGACCTGAGAGACCCATGGCATTCTCTCAGGGAATTACTTTGAGAGGTTGGANNAGGAGGAGGCNAACCA  
 NATTCANAATCTGCNGAAGCANNANTCNTACAGACTCAGGGGNGGNNANATTTTTATTCTTCCCCCA  
 NCCNANTGTTAAGGGTNGGAGGCNACAAGGNCNTTNNCCCCTGAAGGNNTNCCTGGNGGAAGATNCGG  
 ATTCCTATGTTAAAANGGGTNTTCCNNTANNNATTNCNANNAANANGGCCCTTTTNNCCCAAANCCCT  
 TCNAAAAAANGNGCNNTTCCNANTNTNNGNGAANTTNNAAAAAGNGGNTTTTTTTTAAANCCNNTTT  
 TNNCGTTNTCTTTTTTCNGGNGGAAACNTTNATTAAANNCCG

Unigene Name: PRKARIA Unigene ID: Hs.183037 Clone ID: 3GD\_188

Human PRKARIA mRNA sequence - var1 (public gi: 23273779) (SEQ ID NO: 396)  
 GGTGGAGCTGTGCGCTAGCCGCTATCGCAGAGTGGAGCGGGGCTGGGAGCAAAGCGCTGAGGGAGCTCGG  
 TACGCCGCCGCTCGCACCCGCAGCCTCGCGCCCCGCCGCCCGTCCCCAGAGAACCATGGAGTCTGGC  
 AGTACCGCCGCCAGTGGAGGACGCGAGCCTTCGAGAATGTGAGCTCTACGTCCAGAAGCATAACATTC  
 AAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCTCTCAG  
 GGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTTCAGAATCTGCAGAAAGCAGGCACTCGT  
 ACAGACTCAAGGGAGGATGAGATTTCTCTCTCCACCCAACCCAGTGGTTAAAGGTAGGAGGCGACGAG  
 GTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCATCCTATGTTAGAAAGGTTATACCAAAAAGA  
 TTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAAAGAATGTGCTGTTTTACATCTTTGATGATAAT  
 GAGAGAAGTGATATTTTTGATGCCATGTTTTCGGTCTCCTTTATCGCAGGAGAGAGCTGTGATTGAGCAAG  
 GTGATGAAGGGGATAACTTCTATGTGATTGATCAAGGAGAGACGGATGTCTATGTTAACAATGAATGGGC  
 AACCAGTGTGGGGGAAGGAGGGAGCTTTGGGAACTTGCTTTGATTTATGGAACACCGAGAGCAGCCACT  
 GTCAAAGCAAAGACAAATGTGAAATTGTGGGGCATCGACCGAGACAGCTATAGAAGAATCCTCATGGGAA  
 GCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTAGTAAAGTCTCTATTTTAGAGTCTCTGGACAA  
 GTGGGAACGCTTACGGTAGCTGATGCATTGGAACAGTGCAGTTTGAAGATGGGCAGAAGATTGTGGTG  
 CAGGGAGAACCAGGGGATGAGTTCTTCATTATTTTAGAGGGGTGAGCTGCTGTGCTACAACGTCGGTCAG  
 AAAATGAAGAGTTTGTGTAAGTGGGAAGATTGGGCCCTTCTGATTATTTTGGTGAATTTGCACTACTGAT  
 GAATCGTCTCGTGCTGCCACAGTTGTTGCTCGTGGCCCCCTTGAAGTGCGTTAAGCTGGACCGACCTAGA  
 TTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAAACGAAACATCCAGCAGTACAACAGTTTGTGT  
 CACTGTCTGTCTGAAATCTGCCTCCTGTGCCTCCCTTTTCTCTCTCCCCAATCCATGCTTCACTCTGC  
 AAAGTCTTTATTTTCCCTACTTGCAGCGCCAAGTGGCCACTGGCATCGCAGCTTCTGTCTGTTTATAT  
 ATTGAAAGTTGCTTTTATTGACCATTTTCAATTTGGAGCATTAACTAAATGCTCATAACAGTTAAATA  
 AATAGAAAGAGTTCTATGGAGACTTTGCTGTTACTGCTTCTCTTTGTGCAGTGTTAGTATTCACCCTGGG  
 CAGTGAGTGCCATGCTTTTGGTGAGGGCAGATCCAGCACCTATTGAATTACCATAGAGTAATGATGTA  
 ACAGTGCAAGATTTTTTTTTTAAGTGACATAATTGTCCAGTTATAAGCGTATTTAGACTGTGGCCATATA  
 TGCTGTATTTCTTTGTAGAATAAATGGTTCTCATTAAACTCTAAAGATTAGGGGAAAATGGATATAGAAA  
 ATCTTAGTATAGTAGAAAGACATCTGCCTGTAAATTAAGCTAGTTTAAGGGTGGAAAAATGCCATTTTTG  
 CTAATTATCAATGGGATATGATTGGTTTCACTTTTTTTTTTCCAGAGTTGTTGTTTGCCAAGCTAATCTG  
 CCTGGTTTTATTTATATCTTGTATTAAATGTTTCTTCTCCAATTCTGAAATACTTTTGTAGTATGGCTATC  
 TATACCTGCCTTTTAAAGTTTGAAACTAACTCATAGATTGCAAATATTGGTTAGTATTTAACTACATCTGC  
 CTCGGCTCACAAATTCGATTAGACCTTTATCCAGCTAGTGCCAAATAATTGATCAGATGCTGAATTGAG  
 AATAAGAATTTGAGGTCTACATTCTTGGTTGTTAATTTAGAGCGTTTGGTTAAAGTATGCTCTCAGCTG  
 ACTCCAGTATAATCTCCTCTGCTCATTAAACTGATTCCAGGAGATTGGATTTGCTGTGACTAGATACAGA  
 TGGAGCAAATGTCTTAACAGAGAAATAGAGGTGATGCTGCTAAAGGGAGAAATGCCAGGCGGACAAAGTT  
 CAGTGTGCGGAATTTTCCCCGTGACATTCACTGGGGCATGAGATTTTGAAGAAGTTTTTACTTTGGTT  
 TAGTCTTTTTTCTCTCTTTTATTCAGCTAGAATTTCTGGTGGGTGATGGTAGGGTATAATGTGTCT  
 GTGTTGCTTCAAATTTGGTCTGAAAGGCTATCCTGCGGAAAGTCCTGCTTCTCTATCTAGCATTTATTTCT  
 CTGGCAAACCTTTCTTTCTTTCTTTTTTAAAGTAACTTGTGTATTGAGTCTTAAGTATTTTAAACAAA  
 TTTCCAGCCTTATGTGTTACATTATCCAATGATACCCAACAGTTTATTTTTATTATTTTTTAAACAAA  
 ATTTACAGTTCTGTAATGTAGGCACTTTTATTTTCAATTGTGATTATATATAAGGTAATGTAGGGTTAT  
 ATTTGGGAGTGACTGCAAGCATTTTCCATCTGTGTGCAACTAACTGACTCTGTTATTGATCCCTTCTCC  
 TGCCCTTTCCAGGTAATTTAAATTTGGTCATGGTAGATTTTTTTCATAGATTTGAAAACTTTTAGGTTG  
 TTACCAAGTATGAAGTATAAATCTGGGGGAAGAGGTTTTATTTACATTTTAGGGTGGGTAAGAAAGCCACC  
 TTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAAATGAGGGTTTTCTGATCTGTACTTTGTGTTT  
 AGCTACCTTTTTTATATTTAAAAAATTAATAATGAAATACGTTCTTACAAGCTTAAAGCTTGATTGAT  
 CTTTGTTTAAATGCCAAATGTACTTAAATGAGTTACTTAGAATGCCATAAAATTCAGTTTCATGTATG

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TATATAATCATGCTCATGTATATTTAGTTACGTATAATGCTTTCTGAGTGAGTTTTACTCTTAAATCATT  
 TGGTTAAATCATTTGGCTTGCTGTTTACTCCCTTCTGTAGTTTTTAATTAAAACTTTAAAGATAAGTCT  
 ACATTAAACAATGATCACATCTAAAGCTTTATCTTTTGTGTAATCTAAGTATATGTGAGAAATCAGAATTG  
 GCATAATTTGTCTTAGTTGATATTCAAGGCTTTAAAGTCATTATTCCTGGGCTTGGTAAAGTGAATTTAT  
 GAGATTTACTGCTAGAAAGTATAGATGGCGAAAGGACCGTTTTGTATTGCTTCTGATTACCAGTCTG  
 ATTATACCATGTGTGCTAATATACTTTTTTTGTTATAGATTGTCTTAATGGTAGGTCAAGTAATAAAAAG  
 AGATGAAATAATTTAAAAA

Human PRKARIA mRNA sequence - (public gi: 4506062) (SEQ ID NO: 397)

GCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCGCCGCTCGCACCCGAGCCTCGCGCCCGCCGCCG  
 CCCGTCCCCAGAGAACCATGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAATG  
 TGAGCTCTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCT  
 CGACCTGAGAGACCCATGGCATTCTCTCAGGGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGA  
 TTCAGAATCTGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCTCTCCACCCAA  
 CCCAGTGGTTAAAGGTAGGAGGCGACGAGGTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCA  
 TCCTATTTTGGTGAAGTTATACCAAAGATTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAAAGA  
 ATGTGCTGTTTTACATCTTGATGATAATGAGAGAAGTGATATTTTTGATGCCATGTTTTCGGTCTCCTT  
 TATCGCAGGAGAGACTGTGATTGAGCAAGGTGATGAAGGGGATAACTTCTATGTGATTGATCAAGGAGAG  
 ACGGATGTCTATGTTAAACAATGAATGGGCAACCAGTGTGGGGAAGGAGGGAGCTTTGGAGAAGTTGCTT  
 TGATTTATGGAACACCGAGAGCAGCCACTGTCAAAGCAAAGACAAATGTGAAATTGTGGGGCATCGACCG  
 AGACAGCTATAGAAGAATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTAGT  
 AAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGCTTACGGTAGCTGATGCATTGGAACCAAGTGC  
 AGTTTGAAGATGGGCAGAAGATTGTGGTGACAGGAGAAACAGGGGATGAGTTCTTATTATTTAGAGGG  
 GTCAGCTGCTGTGCTACAACGTCGGTCAGAAAATGAAGAGTTTGTGAAGTGGGAAGATTGGGGCCTTCT  
 GATTATTTTGGTGAAATTGCACTACTGATGAATCGTCCCTCGTGCTGCCACAGTTGTTGCTCGTGGCCCCCT  
 TGAAGTGCCTTAAGCTGGACCGACCTAGATTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAAACG  
 AAACATCCAGCAGTACAACAGTTTTGTGTCACTGTCTGTCTGAAATCTGCCTCCTGTGCCTCCCTTTTCT  
 CCTCTCCCCAATCCATGCTTCACTCATGCAAACGCTTTATTTTCCCTACTTGCAGCGCCAAGTGGCCAC  
 TGGCATCGCAGCTTCTGTCTGTTTATATATTGAAAGTTGCTTTTATTGACCATTTTCAATTTGGAGCA  
 TTAATAAATGCTCATACAGTTAAATAAATAGAAAGAGTTCTATGGAGACTTTGCTGTTACTGCTTCT  
 CTTTGTGCAGTGTTAGTATTCACCTGGGCAGTGAGTGCCATGCTTTTTTGGTGAGGGCAGATCCAGCACC  
 TATTGAATTACCATAGAGTAATGATGTAACAGTGCAAGATTTTTTTTTTAAGTGACATAATTGTCCAGT  
 TATAAGCGTATTTAGACTGTGGCCATATATGCTGTATTTCTTTGTAGAATAAATGGTTTCTCATTAACT  
 CTAAAGATTAGGGAAGTTGATATAGAAAATCTTAGTATAGTAAAGACATCTGCCTGTAATTAAGCTAG  
 TTTAAGGGTGGAAAATGAAAATTTTTGCTAATTATCAATGGGATATGATTGGTTTCAGTTTTTTTTTCC  
 AGAGTTGTTGTTTGCCAAGCTAATCTGCCTGGTTTATTTATATCTTGTTATTAATGTTTCTCTCCAATT  
 CTGAAATACTTTTGAAGTATGGCTATCTATACCTGCCTTTTAAGTTTGAAACTAACTCATAGATGCAAATA  
 TTGGTTAGTATTTAACTACATCTGCCTCGGCTCACAATTCGATTAGACCTTTATCCAGCTAGTGCCAA  
 ATAATTGATCAGATGCTGAATTGAGAATAAGAATTTGAGGTCTACATTCTTGGTTGTTAATTTAGAGCGT  
 TTGGTTAAAGTATGCTCCTTCAGCTGACTCCAGTATAATCTCCTCTGCTCATTAACTGATTCCAGGAGAT  
 TGGATTGCTGTGACTAGATACAGATGGAGCAAATGTCTAACAGAGAAATAGAGGTGATGCTGCTAAAG  
 GGAGAAATGCCAGGCGGACAAAGTTCAGTGTGCGGAATTTCCCGTGACATTCACTGGGGCATGAGATT  
 TTGGAAGAAGTTTTTACTTTGGTTTAGTCTTTTTTCTCTTTTATTTCAGCTAGAATTTCTGGTGGG  
 TTGATGGTAGGGTATAATGTGTCTGTGTTGCTTCAAATTGGTCTGAAAGGCTATCCTGCTGAAAGTCTCTG  
 CTTTCTATCTAGCATTTATTCCTCTGGCAAACTTTTCTTTCTTTTCTTTTAAAGTAAACTTGTGTAT  
 TGAGTCTTAACTGTATTTTCAAGTATTTCCAGCCTTATGTGTTACATTATTCCAATGATACCCACAGTTT  
 ATTTTTATTATTTTTTAAACAAAATTTACAGTTCTGTAATGTAGGCACTTTTATTTTCATTGTGATTT  
 ATATATAAGGTAATGTAGGGTTATATTTGGGAGTGACTGCAAGCATTTTCCATCTGTGTGCAACTAACT  
 GACTCTGTTATTGATCCCTTCTCCTGCCCTTTCCAGGTAATTTAAATTGGTCATGGTAGATTTTTTTCA  
 TAGATTTGAAAACTTTTAGGTTGTTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTATTTACAT  
 TTTAGGGTGGGTAAGAAAGCCACCTTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAATGAGG  
 GTTCTGATCTGTACTTTGTGTTAGCTACCTTTTATATTTAAAAAATTAATAATGAAAATTATGTTCT  
 TACAAGCTTAAAGCTTGATTGATCT

Unigene Name: PTPN12 Unigene ID: Hs.62

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Human PTPN12 mRNA sequence - var1 (public gi: 292408) (SEQ ID NO: 123)  
AGCGACCCGAGCCGGGGGACGCGGGAGGATGGAGCAAGTGGAGATCCTGAGGAAATTCATCCAGAGGGT  
CCAGGCCATGAAGAGTCTTGACCACAATGGGGAGGACAACTTCGCCCCGGGACTTCATGCGGTTAAGAAGA  
TTGTCTACCAAATATAGAACAGAAAAGATATATCCACAGCCACTGGAGAAAAAGAAAATGTTAAAA  
AGAACAGATACAAGGACATACTGCCATTTGATCACAGCCGAGTTAAATTGACATTAAAGACTCCTTCACA  
AGATTGAGACTATATCAATGCAAATTTTATAAAGGGCGTCTATGGGCCAAAAGCATATGTAGCAACTCAA  
GGACCTTTAGCAAATACAGTAATAGATTTTGGAGGATGATATGGGAGTATAATGTTGTGATCATTGTAA  
TGGCCTGCCGAGAATTTGAGATGGGAAGGAAAAATGTGAGCGCTATTGGCCTTTGTATGGAGAAGACCC  
CATAACGTTTGCACCATTTAAAAATTTCTGTGAGGATGAACAAGCAAGAAGCAAGCAAGCAAGCAAGCA  
CTCTTACTTGAATTTCAAATGAATCTCGTAGGCTGTATCAGTTTCATTATGTGAAGTGGCCAGACCATG  
ATGTTCCCTCATCATTTGATTCTATTCTGGACATGATAAGCTTAATGAGGAAATATCAAGAACATGAAGA  
TGTTCCATTTGTATTCTATGTCAGTGCAGGCTGTGGAAGAAGAGGTGCCATTTGTGCCATAGATTATACG  
TGAATTTACTAAAAGCTGGGAAAATACCAGAGGAATTTAATGTATTTAATTTAATACAAGAAATGAGAA  
CACAAAGGCATTCTGCAGTACAAACAAAGGAGCAATATGAACCTTGTTTCATAGAGCTATTGCCCACTGTT  
TGAAAAACAGCTACAACATATGAAATTCATGGAGCTCAGAAAAATTGCTGATGGAGTGAATGAATTAAC  
ACTGAAAACATGATCAGCTCCATAGAGCCTGAAAAACAAGATTCTCCTCCTCCAAAACCAAGGACCC  
GCAGTTGCCTTGTGTAAGGGGATGCTAAAGAAGAAATATCGAGCCACCGGAACCTCATCCAGTGCCACC  
CATCTTGACACCTTCTCCCCCTTCAGCTTTTCCAACAGTCACTACTGTGTGGCAGGACAATGATAGATAC  
CATCCAAAGCCAGTGTTCATATGGTTTCATCAGAACACATTGAGCAGACCTCAACAGAACTATAGTA  
AATCAACAGAACTTCCAGGGAAAAATGAATCAACAATTTGAACAGATAGATAAAAAATTTGGAACGAAATTT  
AAGTTTTGAGATTAAAGAAGGTCCCTCTCCAAGAGGGACCAAAAAGTTTTGATGGGAACACACTTTTGAAT  
AGGGGACATGCAATTTAAATTAATCTGCTTCACCTTGTATAGCTGATAAAATCTCTAAGCCACAGGAAT  
TAAGTTCAGATCTAAATGTGCGGTGATACTTCCAGAACTCTGTGTGGACTGCAGTGTAAACAAATCAAA  
CAAAGTTTTCAGTTACTCCAGCAGAAGATCCAGAACTCAGACACACCTCCAAGGCCAGACCGCTTGCCCT  
CTTGATGAGAAAGGACATGTAACGTGGTCATTTTCATGAGCTGAAAATGCCATACCCATACCTGATTAT  
CTGAAGGCAATTCCTCAGATATCAACTATCAAACCTAGGAAAATGTGAGTTTAAACACCAAGTCTTACAAC  
ACAAGTTGAAACACCTGATCTTGTGGATCATGATAACACTTCACCACTCTTCAGAACACCCCTCAGTTTT  
ACTAATCCACTTCACTCTGATGACTCAGACTCAGATGAAAGAACTCTGATGGTGCTGTGACCCAGAATA  
AAACTAATATTTCAACAGCAAGTGCACAGTTTCTGCTGCCACTAGTACTGAAAGCATTCTTACTAGGAA  
AGTATTGCCAATGTCCATTGCTAGACATAATATAGCAGGAACAACACATTAGGTGCTGAAAAAGATTGTT  
GATGTTAGTGAAGATTACCTCTCCCTACCTGAAAGAACTCCTGAATCGTTTGTGTTAGCAAGTGAAC  
ATAATACACCTGTAAGATCGGAATGGAGTGAACCTCAAAGTCAGGAACGATCTGAACAAAAAAGTCTGA  
AGGCTTGATAACCTCTGAAAATGAGAAATGTGATCATCCAGCGGGAGGTATTCATCTATGAAATGTGCATA  
GAATGTCCACCTACTTTCAGTGACAAGAGAGAACAAATATCAGAAAATCCAACAGAAAGCCACAGATATTG  
GTTTTGGTAATCGATGTGGAAGAACCAAGGACCAAGAGATCCACCTCAGAAATGGACATGATTGAGGGA  
GCTAGAAGACACTTTAAGTTATACTGGAATTTCCAGGTGCCACTGAAAGCCAGATTTATAGTATTCCATC  
TTTAATATGTGGGACTAACAGCAGTGTAGATTGTACCTTAATATTTTGTCTGGGACCATCTACCTGCC  
TTATACTACACTTAGGAAAAAGTATTACATATGGTTTATTTTGAACCTTCAAGTATTATTGCCTTAATGT  
CTCTTAACCTGTTACACGCTGCTTGTAGACATGTTAATATAGTAATACCTTTATGATATATTGAGTTTA  
AGGACTACTCTTTTTCTGTTTTATCATGTATGCATTATTTTGTATATGTACAGGGCAAGTAGGTATATAA  
TTTGATAAAGTTGCAATTGAAATATTATTAACAGAAGATGTAAGAAATTTCTGCATGGTCTAAATCTTGT  
TGTACTTTATTTGTAAATTTTGGCCTGGAGTTTGTAGAAAATAGTTTCTGAATTTTAACTTGCTGGAT  
TCATGCAGCCAGCTTTGCAGGTTATCAGAGATCAAAGATTGTAATAATAATTTTGTAAATGTAAGCAAA  
AAGTTATTTTATATTATATACAGTCTAATTGTTTCATCCTAATTGTTTCTGTTTTTATCTAGTCAGAGAT  
TCAGTAAGTGCCTTGGAAACAATATTGAATCTCTTAGCTGTGTGTTTTCTTAATATTGAACTCAAG  
TGGGATTAGAAGACTATCAAAATACATGTATGTTTCAGATATTGACCTGTCATTAAAAAAAACAAACAG  
TTTACAGTG

Human PTPN12 mRNA sequence - var2 (public gi: 29476876) (SEQ ID NO: 124)  
GGGGAGAGGCGGCTGCGGCTGCGGCTGCTGGCGGGGGTGGGGGGGAGGAGAACCGGGAAGGG  
GGGGCAGGGCGAGCGGAGAGCTAGCTGTGTTCTGAGGCGCAGCCCGCCGCTAGGGCGGTGGGGAGGAGG  
AGGGAGCCGCGGGGCTTGGCGGGGTCGGGAGGGAGGGACGTGCTGGGGGAACGAGCTGGGGAAGACGGAG  
CGGGCTCTGTGCGGGCGGGCGGGCGGGGGGGCCAGCGACCGCAGCCGGGGGACGCGGGAGGATGG  
AGCAAGTGGAGATCCTGAGGAAATTCATCCAGAGGGTCCAGGCCATGAAGAGTCTGACCACAATGGGGA  
GGACAACCTCGCCCCGGGACTTCATGCGGTTAAGAAGATTGTCTACCAAATATAGAACAGAAAAGATATAT  
CCACAGCCACTGGAGAAAAAGAAAATGTTAAAAAGAACAGATACAAGGACATACTGCCATTTGATC  
ACAGCCGAGTTAAATTTGACATTAAAGACTCCTTACAAGATTGAGACTATATCAATGCAAATTTTATAAA  
GGGCGTCTATGGGCCAAAAGCATATGTAGCAACTCAAGGACCTTTAGCAAATACAGTAATAGATTTTGG  
AGGATGATATGGGAGTATAATGTTGTGATCATTGTAATGGCCTGCCGAGAATTTGAGATGGGAAGGAAAA  
AATGTGAGCGCTATTGGCCTTTGTATGGAGAAGACCCATAACGTTTGCACCATTTAAAATTTCTGTGA  
GGATGAACAAGCAAGAACAGACTACTTCATCAGGACACTCTTACTTGAATTTCAAATGAATCTCGTAGG  
CTGTATCAGTTTCATTATGTGAAGTGGCCAGACCATGATGTTCTTCATCATTTGATTCTATTCTGGACA

Figure 36 part - 69



TGATAAGCTTAATGAGGAAATATCAAGAACATGAAGATGTTCTATTGTATTTCATTGCAGTGCAGGCTG  
TGGAAGAACAGGTGCCATTTGTGCCATAGATTATACGTGGAATTTACTAAAAAGCTGGGAAAATACCAGAG  
GAATTTAATGTATTTAATTTAATACAAGAAATGAGAACAAGGCATTCTGCAGTACAAACAAAGGAGC  
AATATGAACCTGTTTCATAGAGCTATTGCCCAACTGTTTGAAAAACAGCTACAACATATGAAATTCATGG  
AGCTCAGAAAATTGCTGATGGAGTGAATGAAATTAACACTGAAAACATGATCAGCTCCATAGAGCCTGAA  
AAACAAGATTCTCCTCCTCCAAAACCAAGGACCCGAGTTGCCCTTGTGAAGGGGATGCTAAAGAAG  
AAATACTGCAGCCACCGGAACCTCATCCAGTGCCACCCATCTTGACACCTTCTCCCCCTTCAGCTTTTCC  
AACAGTCACTACTGTGTGGCAGGACAATGATAGATACCATCCAAAGCCAGTGTTGCATATGGTTTCATCA  
GAACAACATTTCAGCAGACCTCAACAGAAACTATAGTAAATCAACAGAACTTCCAGGGAAAAATGAATCAA  
CAATTGAACAGATAGATAAAAAATTGGAACGAAATTTAAGTTTGTGAGATTAAAGAAGGTCCTCTCCAAGA  
GGGACCAAAAAGTTTGTATGGGAACACACTTTTGAATAGGGGACATGCAATTTAAATTAATCTGCTTCA  
CCTTGTATAGCTGATAAAATCTTAAGCCACAGGAATTAAGTTTCAGATCTAAATGTGGTGATCTTCCC  
AGAATCTTGTGTGGACTGCAGTGTAACACAATCAAACAAAGTTTCAGTTACTCCACCAGAAGAATCCCA  
GAATTCAGACACACCTCCAAGGCCAGACCGCTTGCTCTTGTATGAGAAAGGACATGTACGTGGTCATT  
CATGGACCTGAAAATGCCATACCCATACCTGATTATCTGAAGGCAATTCCTCAGATATCAACTATCAAA  
CTAGGAAAACCTGTGAGTTTAACACCAAGTCTACAACACAAGTTGAAACACCTGATCTTGTGGATCATGA  
TAACACTTCACCCTCTTCAGAACACCCCTCAGTTTACTAATCCACTTCACTCTGATGACTCAGACTCA  
GATGAAAGAAACTCTGATGGTGCTGTGACCCAGAATAAACTAATATTTCAACAGCAAGTGCCACAGTTT  
CTGCTGCCACTAGTACTGAAAGCAATTTCTACTAGGAAAGTATTGCCAATGTCCATTGTCTAGACATAAT  
AGCAGGAACAACACATTTCAGGTGCTGAAAAAGATGTTGATGTTAGTGAAGATTACCTCTCCCTACCT  
GAAAGAATCCTGAATCGTTTGTGTTAGCAAGTGAACATAATACACCTGTAAGATCGGAATGGAGTGAAC  
TTCAAAGTCAGGAACGATCTGAACAAAAAAGTCTGAAGGCTTGATAACCTCTGAAAATGAGAAATGTGA  
TCATCCAGCGGGAGGTATTCATATGAAATGTGCATAGAATGTCCACCTACTTTCAGTGACAAGAGAGAA  
CAAAATATCAGAAAATCCAACAGAACCCACAGATATTGGTTTTTGGTAATCGATGTGGAAAAACCAAGGAC  
CAAGAGATCCACCTTCAGAATGGACATGATTTCAGGGAGCTAGAAGACACTTTAAGTTATACTGGAAAAAT  
CAGGTGCCACTGAAAGCCAGATTTATAGTATTCATCTTTAATATGTGGGACTAACAGCAGTGTAGATTG  
TTACCTTAATATTTTGTCTGGGACCATCTACCTGCCTTATACTACACTTAGGAAAAAGTATTACATATG  
GTTATTTTGAACCTCAAGTATTATTGCCCTAATGTCTCTTAACCTGTTACACGCTGCTTGTAGACAT  
GTTAATATAGTAATACCTTTATGATATATTGAGTTTAAAGGACTACTCTTTTCTGTTTTATCATGTATGC  
ATTATTTTGTATATGTACAGGGCAAGTAGGTATATAATTTGATAAAGTTGCAATTGAAATATTATTAACA  
GAAGATGTAAGAAATTTCTGCATGGTCTAAATCTTGTGTACTTTATTTGTAAATATTGTCCTGGAGT  
TTTAGAAAATAGTTTCTGAATTTTAACTTGCTGGATTCAATGCAGCCAGCTTTCAGGTTATCAGAGATC  
AAAGATTGTAATAATAATTTTGTAAATTGTAAGCAAAAAGTTATTTTATATTATATACAGTCTAATTGT  
TCATCCTAATTGTTCTGTTTTTCATCTAGTCAGAGATTTCAGTAAGTGCCTTGGAAACAATATTGAATTCTC  
TTAGCTTGTGTGTTTTCTTTAATATTGAACTCAAGTGGGATTAGAAGACTATCAAAATACATGTATGT  
TTCAGGATATTGACCTGTCATTAAAAAAAACAAACAGTTTACAGTGCCAAAAA

Human PTPN12 mRNA sequence - var3 (public gi: 18375651) (SEQ ID NO: 125)  
AGCGACCGCAGCCGGGGGACGCGGGAGGATGGAGCAAGTGGAGATCCTGAGGAAATTCATCCAGAGGGT  
CCAGGCCATGAAGAGTCTGACCACAATGGGGAGGACAACTTCGCCCGGGACTTCATGCGGTTAAGAAGA  
TTGTCTACCAAATATAGAACAGAAAAGATATATCCACAGCCACTGGAGAAAAAGAGAAAATGTTAAAA  
AGAACAGATACAAGGACATACTGCCATTTGATCACAGCCGAGTTAAATTGACATTAAAGACTCCTTCACA  
AGATTTCAGACTATATCAATGCAAAATTTATAAAGGGCGTCTATGGGCCAAAAGCATATGTAGCAACTCAA  
GGACCTTTAGCAAATACAGTAATAGATTTTGGAGGATGATATGGGAGTATAATGTTGTGATCATGTAA  
TGGCCTGCCGAGAATTTGAGATGGGAAGGAAAAATGTGAGCGCTATTGGCCTTTGTATGGAGAAGACCC  
CATAACGTTTGCACCATTTAAAAATTTCTTGTGAGGATGAACAAGCAAGAACAGACTACTTCATCAGGACA  
CTCTTACTTGAATTTCAAAATGAATCTCGTAGGCTGTATCAGTTTCATTATGTGAAGTGGCCAGACCATG  
ATGTTCTCTTCATCATTTGATTCTATTCTGGACATGATAAGCTTAATGAGGAAATATCAAGAACATGAAGA  
TGTTCTATTTGTATTTCATTGCAGTGCAGGCTGTGGAAGAACAGGTGCCATTTGTGCCATAGATTATACG  
TGGAATTTACTAAAAGCTGGGAAAAATACCAGAGGAATTTAATGTATTTAATTTAATACAAGAAATGAGAA  
CACAAAGGCATTCTGCAGTACAAACAAAGGAGCAATATGAACCTGTTTCATAGAGCTATTGCCCAACTGTT  
TGAAAAACAGCTACAACATATGAAATTCATGGAGCTCAGAAAATTTGCTGATGGAGTGAATGAAATTAAC  
ACTGAAAACATGATCAGCTCCATAGAGCCTGAAAAACAAGATTCTCCTCCTCCAAAACCAAGGACCC  
GCAGTTGCCTTGTGTAAGGGGATGCTAAAGAAGAAATACTGCAGCCACCGGAACCTCATCCAGTGCCACC  
CATCTTGACACCTTCTCCCCCTTCAGCTTTTCCAACAGTCACTACTGTGTGGCAGGACAATGATAGATAC  
CATCCAAAGCCAGTGTGTCATATGGTTTCATCAGAACCAATTCAGCAGACCTCAACAGAACTATAGTA  
AATCAACAGAACTTCCAGGGAAAAATGAATCAACAATTTGAACAGATAGATAAAAAATTTGAACGAAATTT  
AAGTTTGTGATTAAGAAGGTCCCTCTCCAAGAGGGACCAAAAAGTTTGTATGGGAACACACTTTTGAAT  
AGGGGACATGCAATTTAAATTAATCTGCTTCACTTGTATAGCTGATAAAATCTCTAAGCCACAGGAAT  
TAAGTTTCAGATCTAATGTGGTGATCTTCCAGAAATCTTGTGTGGACTGCAGTGAACACAATCAAA  
CAAAGTTTCAGTTACTCCACAGAGAATCCAGAAATTCAGATTCAGACCTCCAAGGCCAGACCGCTTGCCT  
CTTGATGAGAAAGGACATGTAACGTGGTCAATTCAGTACCTGAAATGCCATACCCATACCTGATTTAT  
CTGAAGGCAATTCCTCAGATATCAACTATCAAACTAGGAAAACCTGTGAGTTTAACACCAAGTCTTACAAC

Figure 36 part - 70

ACAAGTTGAAACACCTGATCTTGTGGATCATGATAACACTTCACCACTCTTCAGAACACCCCTCAGTTTT  
ACTAATCCACTTCACTCTGATGACTCAGACTCAGATGAAAGAACTCTGATGGTGCTGTGACCCAGAATA  
AAACTAATATTTCAACAGCAAGTGCCACAGTTTCTGCTGCCACTAGTACTGAAAGCATTCTACTAGGAA  
AGTATTGCCAATGTCCATTGTCTAGACATAATATAGCAGGAACAACACATTCAAGGTGCTGAAAAAGATGTT  
GATGTTAGTGAAGATTACCTCCTCCCCTACCTGAAAGAACTCCTGAATCGTTTGTGTTAGCAAGTGAAC  
ATAATACACCTGTAAGATCGGAATGGAGTGAACCTCAAAGTCAGGAACGATCTGAACAAAAAGTCTGA  
AGGCTTGATAACCTCTGAAAAATGAGAAATGTGATCATCCAGCGGGAGGTATTCACTATGAAATGTGCATA  
GAATGTCCACCTACTTTCACTGACAAGAGAGAACAAATATCAGAAAAATCCAACAGAAGCCACAGATATTG  
GTTTTGGTAATCGATGTGGAAAAACCCAAAGGACCAAGAGATCCACCTTCAGAATGGACATGATTCAAGGA  
GCTAGAAGACACTTTAAGTTATACTGGAATAATCAGGTGCCACTGAAAGCCAGATTATAGTATTCCATC  
TTTAATATGTGGGACTAACAGCAGTGTAGATTGTTACCTTAATATTTTTTGCTGGGACCCTACCTGCC  
TTATACTACACTTAGGAAAAAGTATTACATATGGTTATTTTTGAACTTCAAGTATTATGCTTAATGT  
CTCTTAACCTGTTACAGCTGCTTGTAGACATGTTAATATAGTAATACCTTTATGATATATTGAGTTTA  
AGGACTACTCTTTTTCTGTTTATCATGTATGCATTATTTTGTATATGTACAGGGCAAGTAGGTATATAA  
TTTGATAAAGTTGCAATTGAAATATTATTAACAGAAGATGTAAGAAATTTCTGCATGGTCTAAATCTTTG  
TGTACTTTATTTGTAAATTTTGGCCTGGAGTTTAGAAAATAGTTTCTGAATTTTAACTTGCTGGAT  
TCATGCAGCCAGCTTTGCAAGTTATCAGAGATCAAAGATTGTAATAATAATTTTGTAAATGTAAGCAAA  
AAGTTATTTTATATTATATACAGTCTAATTGTTTCATCCTAATTGTTCTGTTTTCATCTAGTCAGAGAT  
TCAGTAAGTGCCTTTAGCAAAATACAGTAATCTCTAGCTTGTGTGTTTCTTTAATATTGAACTCAAG  
TGGGATTAGAAGACTATCAAAATACATGTATGTTTCAGGATATTGACCTGTCAATTAACAAAAACAAACA  
GTTTACAGTG

Human PTPN12 mRNA sequence - var4 (public gi: 545651) (SEQ ID NO: 126)

GTTAAAAGGAACAGATACAAGGACATACTGCCATTTGATCACAGCCGAGTTAAATTGACATTAAAGACTC  
CTTCACAAGATTCACTATATCAATGCAAATTTTATAAAGGGCGTCTATGGGCCAAAAGCATATGTAGC  
AACTCAAGGACCTTTAGCAAAATACAGTAATAGATTTTGGAGGATGGTATGGGAGTATAATGTTGTGATC  
ATTGTAATGGCCTGCCGAGAATTGA

Human PTPN12 mRNA sequence - var5 (public gi: 19683965) (SEQ ID NO: 127)

GGGACTTCACCACTCTTCAGAACACCCCTCAGTTTTACTAATCCACTTCACTCTGATGACTCAGACTCAG  
ATGAAAGAACTCTGATGGTGCTGTGACCCAGAATAAACTAATATTTCAACAGCAAGTGCCACAGTTTC  
TGCTGCCACTAGTACTGAAAGCATTCTACTAGGAAAGTATTGCCAATGTCCATTGCTAGACATAATATA  
GCAGGAACAACACATTCAAGGTGCTGAAAAAGATGTTGATGTTAGTGAAGATTACCTCCTCCCTACCTG  
AAAGAACTCCTGAATCGTTTGTGTTAGCAAGTGAACATAATACACCTGTAAGATCGGAATGGAGTGAAC  
TCAAAGTCAGGAACGATCTGAACAAAAAGTCTGAAGGCTTGATAACCTCTGAAAATGAGAAATGTGAT  
CATCCAGCGGGAGGTATTCACTATGAAATGTGCATAGAATGTCCACCTACTTTCAGTGACAAGAGAGAAC  
AAATATCAGAAAAATCCAACAGAAGCCACAGATATTGGTTTGGTAATCGATGTGAAAAACCCAAAGGACC  
AAGAGATCCACCTTCAGAATGGACATGATTCAAGGGAGCTAGAAGACACTTAAAGTTATACTGGAAATTC  
AGGTGCCACTGAAAGCCAGATTATAGTATTCCATCTTTAATATGTGGGACTAACAGCAGTGTAGATTGT  
TACCTTAATATTTTTTGCTGGGACCCTACCTGCCTTATACTACACTTAGGAAAAAGTATTACATATGG  
TTTATTTGAACTTCAAGTATTATTGCCTTAATGTCTCTTAACCTGTTACACGCTGCTTGTAGACATG  
TTAATATAGTAATACTTTATGATATATTGAGTTTAAAGACTACTCTTTTCTGTTTTATCATGTATGCA  
TTATTTTGTATATGTACAGGGCAAGTAGGTATAATTTGATAAAGTTGCAATTGAAATATTATTAACAG  
AAGATGTAAGAAATTTCTGCATGGTCTAAATCTTGTGTACTTTATTTGTAAATTTTGGCCTGGAGTT  
TTAGAAAATAGTTTCTGAATTTTAACTTGCTGGATTATGCAGCCAGCTTTCAGGTTATCAGAGATCA  
AAGATTGTAATAATAATTTGTAAATTTGAAGCAAAAAGTTATTTTATATTATATACAGTCTAATTGTT  
CATCCTAATTGTTCTGTTTTTCATCTAGTCAGAGATTCAAGTGGCCTTGAACAATATTGAATTCTCT  
TAGCTTGTGTGTTTCTTTAATATTGAACTCAAGTGGGATTAGAAGACTATCAAAATACATGTATGTT  
TCAGGATATTGACCTGTCAATTAACAAAAACAAACAGTTTACAATAAAAAAAAAAAAAAAAAAAAAA  
AAAAA

Human PTPN12 mRNA sequence - var6 (public gi: 220033) (SEQ ID NO: 128)

GCCGGGGGACGCGGGAGGATGGAGCAAGTGGAGATCCTGAGGAAATTCATCCAGAGGGTCCAGGCCATG  
AAGAGTCCTGACCACAATGGGGAGGACAACCTCGCCGGGACTTCATGCGGTTAAGAAGATTGTCTACCA  
AATATAGAACAGAAAAGATATATCCACAGCCACTGGAGAAAAAGAGAAATGTTAAAAAGAACAGATA  
CAAGGACATACTGCCATTTGATCACAGCCGAGTTAAATTGACATTAAAGACTCCTTCACAAGATTCAAGC  
TATATCAATGCAAATTTTATAAAGGGCGTCTATGGGCCAAAAGCATATGTAGCAACTCAAGGACCTTTAG  
CAAATACAGTAATAGATTTTGGAGGATGGTATGGGAGTATAATGTTGTGATCATTTGTAATGGCCTGCCG  
AGAATTTGAGATGGGAAGGAAAAATGTGAGCGCTATTGGCCTTTGTATGGAGAAGACCCCATACGTTT  
GCACCATTTAAATTTCTTGTGAGGATGAACAAGCAAGCAAGCAAGCAAGCAAGCAAGCAAGCAAGCAAG  
AATTTCAAATGAATCTCGTAGGCTGTATCAGTTTCATTATGTGAAGTGGCCAGACCATGATGTTCTTC  
ATCATTTGATTCTATTCTGGACATGATAAGCTTAATGAGGAAATATCAAGAACATGAAGATGTTCTTATT

Figure 36 part - 71



TGTATTTCATTGCAGTGCAGGCTGTGGAAGAACAGGTGCCATTTGTGCCATAGATTATACGTGGAATTTAC  
TAAAAGCTGGGAAAAATACCAGAGGAATTTAATGTATTTAATTAACAAGAAATGAGAACACAAAGGCA  
TTCTGCAGTACAAACAAAGGAGCAATATGAACTTGTTTCATAGAGCTATTGCCCACTGTTTGAAAAACAG  
CTACAACATATATGAAATTCATGGAGCTCAGAAAATTTGCTGATGGAGTGAATGAAATTAACACTGAAAACA  
TGGTCAGCTCCATAGAGCCTGAAAAACAGATTCTCCTCCTCCAAAACCACCAAGGACCCGAGTTGCCT  
TGTTGAAGGGGATGCTAAAGAAGAAATACTGCAGCCACCGGAACCTCATCCAGTGCCACCCATCTTGACA  
CCTTCTCCCCCTTCAGCTTTTCCAACAGTCACTACTGTGTGGCAGGACAATGATAGATACCATCCAAAGC  
CAGTGTGTGCATATGGTTTCATCAGAACAACATTTCAGCAGACCTCAACAGAACTATAGTAAATCAACAGA  
ACTTCCAGGGAAAAATGAATCAACAATTGAACAGATAGATAAAAAATTTGGAACGAAATTTAAGTTTTGAG  
ATTAAGAAGGTCCCTCTCCAAGAGGGACCAAAAAGTTTTGATGGGAACACACTTTTGAATAGGGGACATG  
CAATTAATAATTAATCTGCTTCACCTTGTATAGCTGATAAAATCTCTAAGCCACAGGAATTAAGTTCAGA  
TCTAAATGTCGGTGATACTTCCCAGAATTCTGTGTGGACTGCAGTGTAAACACAATCAAAACAAAGTTTCA  
GTTACTCCACCAGAAGAATCCCAGAATTCAGACACACCTCCAAGGCCAGACCGCTTGCCTCTTGATGAGA  
AAGGACATGTAACGTGGTCATTTTCATGGACCTGAAAATGCCATACCCATACCTGATTATCTGAAGGCCAA  
TTCCTCAGATATCAACTATCAAACTAGGAAAATGTGAGTTTAACACCAAGTCTTACAACACAAGTTGAA  
ACACCTGATCTTGTGGATCATGATAACACTTCACCACTCTTCAGAACACCCCTCAGTTTTACTAATCCAC  
TTCACCTGATGACTCAGACTCAGATGAAAGAACTCTGATGGTGTGTGACCCAGAATAAACTAATATAT  
TTCAACAGCAAGTGCCACAGTTTCTGCTGCCACTAGTACTGAAAGCATTCTACTAGGAAAGTATTGCCA  
ATGTCCATTGCTAGACATAATATAGCAGGAACAACACATTCAGGTGCTGAAAAAGATGTTGATGTTAGTG  
AAGATTACCTCCTCCCTACCTGAAAGAACTCCTGAATCGTTTGTGTTAGCAAGTGAACATAATACACC  
TGTAAGATCGGAATGGAGTGAACCTTCAAAGTCAGGAACGATCTGAACAAAAAGTCTGAAGGCTTGATA  
ACCTCTGAAAAATGAGAAATGTGATCATCCAGCGGGAGGTATTCACTATGAAATGTGCATAGAAATGTCAC  
CTACTTTTCAGTGACAAGAGAGAGAACAATATCAGAAAATCCAACAGAGCCACAGATATTGGTTTTGGTAA  
TCGATGTGGAAAACCCAAAGGACCAAGAGATCCACCTTCAGAATGGACATGATTTCAGGGAGCTAGAAGC  
ACTTTAAGTTTACTGGAATAATTCAGGTGCCACTGAAAGCCAGATTTATAGTATTCCATCTTTAATATGT  
GGGACTAACAGCAGTGTAGATTGTTACCTTAATATTTTTGCTGGGACCATCTACCTGCCCTTATACTACA  
CTTAGGAAAAAGTATTACATATGGTTTATTTTGAACTTCAAGTATTATTGCCTTAATGTCTCTTAACCC  
TGTTACACGCTGCTTGTAGACATGTTAATATAGTAATACCTTTATGATATATTGAGTTTAAAGGACTACCC  
TTTTTCTGTTTTATCATGTATTATTATTTTGTATATGTACAGGGCAAGTAGGTATATAATTTGATAAAG  
TTGCAATTGAAATATTATTAACAGAAGATGTAAGAAATTTCTGCATGGTCTAAATCTTTGTGTACTTTAT  
TTGTAATATTATTTGCCCTGGAGTTTTAGAAAATAGTTTCTGAATTTTAACTTGCTGGATTATGCAGCC  
AGCTTTCAGGTTATCAGAGATCAAAGATTGTAATAATAATTTTGTAAATTGTAAGCAACATTCTGC

Human PTPN12 protein sequence - var1 (public gi: 220034) (SEQ ID NO: 266)  
MEQVEILRKFIQRVQAMKSPDHNGEDNFARDFMRLRLSTKYRTEKIYPTATGEKEENVKKNRYKDILPF  
DHSRVKLTCLKTPSQSDYINANFIKGVYGPAYVATQGPLANTVIDFWRMVWEYNVVIIVMACREFEMGR  
KKCERYWPLYGEDPITFAPFKISCEDQARTDYFIRTLLEFQNESRRLYQFHYVNWPDHDPSSFDLSIL  
DMISLMRKYQEHEDVPICIHCSAGCGRTGAI CAIDYTNWLLKAGKIP EEFNVFNLIQEMRTQRHSAVQTK  
EQYELVHRAIAQLFEKQLQLYEIHGAQKIADGVNEINTENMVSSIEPEKQDSPPPKPPRTRSCLVGDAK  
EELQPPPEHPVPPILTPSPPSAFPTVTTVWQDNDRYHHPKPVLMHVSSEQHSADLNRNYSKSTELPGKNE  
STIEQIDKKLERNLSFEIKKVPLOEGPKSFDGNTLLNRGHAIKIKSASPCIAADKISKPQELSSDLNVGDT  
SQNSCVDSCSVTQSNKVSVPPEESQNSDTPPRPDRLPLDEKGHVTSFHPGPNAPIPDLSEGNSSDINY  
QTRKTVSLTPSPPTQVETPDLVDHNTSPLFRTPLSFTNPLHSDSDSDERNSDGAVTQNKTNISTASAT  
VSAATSTESISTRKVLPMISARHNIAGTTHSGAEKDVDVSEDSPPPLPERTPESFVLASEHNTPVRSWS  
ELQSQERSEQKKEGLITSENEKCDHPAGGIHYEMCIECPPTFSDKREQISENPTEATDIGFGRNRCGKPK  
GPRDPPSEWT

Human PTPN12 protein sequence - var2 (public gi: 7689910) (SEQ ID NO: 267)  
VKRNRYKDILPFDSRVKLTCLKTPSQSDYINANFIKGVYGPAYVATQGPLANTVIDFWRMVWEYNVVI  
IVMACREF

Human PTPN12 protein sequence - var3 (public gi: 292409) (SEQ ID NO: 268)  
MEQVEILRKFIQRVQAMKSPDHNGEDNFARDFMRLRLSTKYRTEKIYPTATGEKEENVKKNRYKDILPF  
DHSRVKLTCLKTPSQSDYINANFIKGVYGPAYVATQGPLANTVIDFWRMIWEYNVVIIVMACREFEMGR  
KKCERYWPLYGEDPITFAPFKISCEDQARTDYFIRTLLEFQNESRRLYQFHYVNWPDHDPSSFDLSIL  
DMISLMRKYQEHEDVPICIHCSAGCGRTGAI CAIDYTNWLLKAGKIP EEFNVFNLIQEMRTQRHSAVQTK  
EQYELVHRAIAQLFEKQLQLYEIHGAQKIADGVNEINTENMISSIEPEKQDSPPPKPPRTRSCLVGDAK  
EELQPPPEHPVPPILTPSPPSAFPTVTTVWQDNDRYHHPKPVLMHVSSEQHSADLNRNYSKSTELPGKNE  
STIEQIDKKLERNLSFEIKKVPLOEGPKSFDGNTLLNRGHAIKIKSASPCIAADKISKPQELSSDLNVGDT  
SQNSCVDSCSVTQSNKVSVPPEESQNSDTPPRPDRLPLDEKGHVTSFHPGPNAPIPDLSEGNSSDINY  
QTRKTVSLTPSPPTQVETPDLVDHNTSPLFRTPLSFTNPLHSDSDSDERNSDGAVTQNKTNISTASAT  
VSAATSTESISTRKVLPMISARHNIAGTTHSGAEKDVDVSEDSPPPLPERTPESFVLASEHNTPVRSWS

Figure 36 part - 72

Human PTPN12 pray sequence:- var1 (SEQ ID NO: 129)

Unigene Name: RALA Unigene ID: Hs.6906 Clone ID: 3GD\_1106

[illegible]

118/202

CTGGAAGAATTCTAGCATGCTACTTGGGGACATAATTTTCAGTGGGAAATATGCCACTGACCGATTTTTTT  
TTTTTCTCTTTGTCAGTGGGGCTAGGACAGTTGATTCAACAAAGTATTTTTTCTTTTCTCAGTCCTA  
ATTTGAACAGGTCAAAGATGTGTTTCAGGCATTCCAGGTAACAGGTGTGTATGTAAAGTTAAAAATAGGCT  
TTTTAGGAACTCACTCTTTAGATATTTACATCCAGCTTCTCATGTAAATATTTGTCTTAAAGGGTTTG  
AGATGTACATCTTTCAATTTTCGTATTTCTCATAGGCTATGCCATGTGCGGAATTCAGTTACCAATGTAAC  
ACTGGCCAGCGGGCCAGCAATCTCCATGTGTACTTATTACAGTCTTATTTAACCAGGGGTCTTAACCAC  
TAACATTGTGACTTTGCTTTTGGACCTTTCTCTCTGGGTACTGAGGTGCTATGAAGCCAACTGACAAA  
GATGCATCACGTGTCTTAGGCTGATGCCACTACCCGATTTGTTTATTTGCAATTTGAGCCATTTAAAGAC  
CAATAAATCTCTTTTTTAAAAAATAAAAAAAAAAAAAAAAAAAAAA

Human RALA mRNA sequence - var3 (public gi: 3483427) (SEQ ID NO: 132)  
ATAATCAAAGCCCAAACTCCTTTCTTATCTTGACCATACTAATAAATATAATTTATAAGCATTGCCATTG  
AAGGCTTAATTGACTGAAATTACTTTAACATTTTGGAAATTGTTGTATATCACTAAAAGCATGAATTGGA  
ACTGCAATGAAAGTCAAATTTACTTTAAAAAGAAATTAATATGGCTTCACCAAGAAGCAAAGTTCAACTT  
ATTTCAATAATGCCTACATTTATCATGGTCTCTGAATGTAGCGTGAAGCTTGTGTTTCTGGGCAGTCTT  
TCTTGAATTTGAAGAGGTGAAATGGGGTGGGGAGTGGGAGGAAAGGTGACTTCTCTGGTGTATTATTAT  
AAAGCTTAAATTTATATCATTTTAAAAATGTCTTGGTCTTCTACTGCCTTGAAAAATGACAATTGTGAAC  
ATGATAGTTAACTACCACTTTTTTTAACCATTATTATGCAAAAAAAAAA

Human RALA mRNA sequence - var4 (public gi: 20147712) (SEQ ID NO: 133)  
ATGGTCGACTACCTAGCAAATAAGCCCAAGGGTGCAGAAATCTTTGGCTTTACACAAAGTCATCATGGTGG  
GCAGTGGTGGCGTGGGCAAGTCAGCTCTGACTCTACAGTTTCATGTACGATGAGTTTGTGGAGGACTATGA  
GCCTACCAAAGCAGACAGCTATCGGAAGAAGGTAGTGCTAGATGGGGAGGAAGTCCAGATCGATATCTTA  
GATACAGCTGGGCAGGAGGACTACGCTGCAATTAGAGACAACACTACTTCCGAAGTGGGGAGGGGTCTCTCT  
GTGTTTTCTCTATTACAGAAATGGAATCCTTTGCAGCTACAGCTGACTTCAGGGAGCAGATTTTAAGAGT  
AAAAGAAGATGAGAATGCTTCCATTTCTACTGGTTAGTAACAAATCAGATTTAGAAGATAAAAGACAGGTT  
TCTGTAGAAGAGGCAAAAAACAGAGCTGAGCAGTGAATGTTAACTACGTGGAACATCTGCTAAAACAC  
GAGCTAATGTTGACAAGGTATTTTTTGATTTAATGAGAGAAATTCGAGCGAGAAAGATGGAAGACAGCAA  
AGAAAAGATGGAAGAAAGAGAGGAAAGTTTAGCCAAGAGAATCAGAGAAAGATGCTGCATTTTATAA

Human RALA mRNA sequence - var5 (public gi: 10439805) (SEQ ID NO: 134)  
AGAATGGAAAAAAGAGAGGAAAAGTTTAGCCAAGAGAATCAGAGAAAGATGCTGCATTTTATAATCAAA  
GCCCAAACTCCTTTCTTATCTTGACCATACTAATAAATATAATTTATAAGCATTGCCATTGAAGGCTTAA  
TTGACTGAAATTACTTTAACATTTTGGAAATTGTTGTATATCACTAAAAGCATGAATTGGAAGTGAATG  
AAAGTCAAATTTACTTTAAAAAGAAATTAATATGGCTTCACCAAGAAGCAAAGTTCACTTATTTTCATAA  
TTGCCTACATTTATCATGGTCTCTGAATGTAGCGTGAAGCTTGTGTTTCTTGGGCAGTCTTTCTTGAAT  
TGAAGAGGTGAAATGGGGTGGGGAGTGGGAGGAAAGGTGACTTCTCTGGTGTATTATAAAGCTTAA  
ATTTATATCATTTTAAAAATGCTTGGTCTTCTACTGCCCTTGAAAAATGACAATTGTGAACATGATGTT  
AACTACCACTTTTTTTAACCATTATTATGCAAAATTTAGAAGAAAAGTTATTGGCATGGTTGTTGCATA  
TAGTTAACTGAGAGTAATTCATCTGTGAATCTGCTTTAATTACCTGGTGAGTAACTTAGAAAAGTGGTG  
TAACTTGTACATGGAATTTTTTGAATATGCCTTAATTTAGAACTGAAAAATATCCGGTTATATCATTC  
TGGGTGTGTTCTTACTGACACCAGGGTCCGCTGCCCATGTGTCTGGTGAGAAAAATATATGCTTGGCA  
CAGCTTTTGTATAGAAAATCTTGAGAAGTAAGTGTCCGCTAGAAGTCTGTCCAAATTTAAAAATGTGTGC  
CATATTCTGGTCTTGAATAAAGATTCCAGAGCTCTTTGATCGCTTTAATAAACTGCAAGTTTCATTTT  
AATTGAAGGGCCAGCATATATACTTGCAAGATAATTTTCAGCTGCAAGGATTCCAGCACCAGTTATGTTTG  
AATGAACCTCCTTTCTCTGAGATTCTGGTCCCTGGAATCCCTTTCTGCTAGTGGTGAGCATGTAAGT  
GTTAAGTTTTTAATCTGGGAGCAGGGCATAGGAAGAAAATGTGAGTAGTCTAATGCATTTTGCCTAGTA  
ACGCTTCGGGAAAAATATTATGCTTGGCATCTGTTTCATTTCTAAATTTATATTCAAAAAGTTACAGTTTG  
ATACAGGAATTTATTAGGAGTAATCTTTTCTGTTTCTGTTTATAATGAAGAACACTGTAGCTACATTTTC  
AGAAGTTAACATCAAGCCATCAACCTGGGTATAGTGCAGAAGACGTGGCACACACTGACCACACATTAG  
GCTGTGTACCAATTGTGTGGTGTACCTGCTGGAAGAATCTAGCATGCTACTTGGGGACATAATTTTCAGT  
GGGAAATATGCCACTGACCGATTTTTTTTTTTTCTCTTTGTCAGTGGGGCTAGGACAGTTGATTCAACA  
AAGTATTTTTTTCTTTTTTCTCAGTCCTAATTTGGACAGGTCAAAGATGTGTTTCAGGCATTCCAGGTAAC  
AGGTGTGTATGTAAAGTTAAAAATAGGCTTTTTAGGAACCTCACTCTTTAGATATTTACATCCAGCTTCTC  
ATGTTAAATATTGTCTTAAAGGGTTTGAGATGTACATCTTTCATTTTCGTATTTCTCATAGGCTATGCC  
ATGTGCGGAATTCAGTTACCAATGTAACTGGCCAGCGGGCCAGCAATCTCCATGTGTACTTATTAC  
AGTCTTATTTAACCAGGGGTCTAACCCTAACATTTGACTTTGCTTTGAGACCTTTCTCTCTCTGGGT  
ACTGAGGTGCTATGAAGCCAACTGACAAAGATGCATACGCTGTCTTAGGCTGATGCCACTACCCGATTTG  
TTTATTTGCAATTTGAGCCATTTAAAGACCAATAAACTTCTTTTTTAAAAAATAAAAAAAAAAAAAAAAAA  
AAAAA

Human RALA Protein sequence - var1 (public gi: 35846) (SEQ ID NO: 269)

Figure 36 part - 74

MAANKPKGQNSLALHKVIMVGSGGVGKSALTLOFMYDEFVEDYEPTKADSYRKKVVLGDGEEVQIDILDTA  
GQEDYAAIRDNYFRSGEGFLCVFSITEMESFAATADFREQILRVKEDENVPFLLVGNKSDLEDKQVSV  
EAKNRAEQWNVNYVETSAKTRANVDKVFFDLMREIRARKMEDSKEKNGKKKRKSLAKRIRERCCIL

Human RALA Protein sequence - var2 (public gi: 20147713) (SEQ ID NO: 270)  
MVDYLANPKGQNSLALHKVIMVGSGGVGKSALTLOFMYDEFVEDYEPTKADSYRKKVVLGDGEEVQIDIL  
DTAGQEDYAAIRDNYFRSGEGFLCVFSITEMESFAATADFREQILRVKEDENVPFLLVGNKSDLEDKQV  
SVEEAKNRAEQWNVNYVETSAKTRANVDKVFFDLMREIRARKMEDSKEKNGKKKRKSLAKRIRERCCIL

Unigene Name: SIAH1 Unigene ID: Hs.295923 Clone ID: 3GD\_150

Human SIAH1 mRNA sequence - var1 (public gi: 27503513) (SEQ ID NO: 135)  
CCAGCGCGTCGCCCCCTGCATCCGTGGCCTCCACTGGAGCTGGGCAGGACCCTACCCAGTGAATCTGGAG  
AAAACAAACCTGGGAGACAGACGAAAGCTTAGGGCACATTGGAGGACAGCGCAGCTGTGGCTCCCATT  
TGGAGATGCAGTCGAATTTGAGCTCACAGGAGGTGTGGTTGCCTCCTGGGGATGGAAGGCTTCCTTTC  
TCCACCTCTGTAACCTGGTGCTTCTGAGAAGTAAATGGTATTTGGATCCTGACCTCAGACGTGAATTTGGG  
TCTTCTGTGCTTAGGAGCAGAAAGAGCCCAGGAGGGGCTGTTCTTTACTTCTTGGGGGAAACGCAATG  
CGTGGCCTGACTTCTCATGACGGGAAAGGCTACTCCACCTTCTCTGTACTCCTGGAGGGGAGTCTTGTTT  
ACATGTTTACCAGCGGCCAGGACAAGGAAGAGAAAAGAAATGAGCCGTGACACTGTACAGCATTACCTA  
CCGTGACCTCGAAGTGTCCACCATCCAGAGGGTGCCTGCCCTGACTGGCACAACCTGCATCCAACAATGA  
CTTGGCGAGTCTTTTGGAGTGTCCAGTCTGCTTTGACTATGTGTTACCGCCCATTTCTCAATGTGAGAGT  
GGCCATCTTGTGTTGTAGCAACTGTGCCCCAAAGCTCACATGTTGTCCAACCTGCGGGGGCCCTTTGGGAT  
CCATTGCGAACCTTGGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCCTGTAAATATGCGTCTTCTGG  
ATGTGAAATAACTCTGCCACACACAGAAAAAGCAGACCATGAAGAGCTCTGTGAGTTTAGGCCTTATTCC  
TGTCCGTGCCCTGGTGCTTCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGCCCATCTGATGCATC  
AGCATAAGTCCATTACAACCCTACAGGAGAGGATATAGTTTCTTGGCTACAGACATTAATCTTCCCTGG  
TGCTGTTGACTGGGTGATGATGCAGTCTGTTTGGCTTTCACTTCATGTTAGTCTTAGAGAAACAGGAA  
AAATACGATGGTCACCAGCAGTTCCTCGCAATCGTACAGCTGATAGGAACACGCAAGCAAGCTGAAAATT  
TTGCTTACCGACTTGAGCTAAATGGTCATAGGCGACGATTGACTTGGGAAGCGACTCCTCGATCTATTCA  
TGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGACACCAGCATTGCACAGCTTTT  
GCAGAAAATGGCAATTTTAGGCATCAATGTAACATTTTCCATGTGTTGAAATGGCAATCAAACATTTTCTG  
GCCAGTGTTTAAACTTTCAGTTTTCACAGAAAATAAGGCACCCATCTGTCTGCCAACCTAAACTCTTTTCG  
GTAGGTGGAAGCTAGACACATGAAGGTAAATAAAAAGAAAGGCTGTAAATACAGGAAACAGTTGCATGT  
AGTAACACTAATATATTTAAAAATAAGTCAACAGTAAACCACTGAAAAAATATATGTATATACACCCAG  
ATGGGCATCTTTGTATTAAGAAAGGAAGCATTGTAAATAAATCTGAGTTTGTGTTTGTGTAGATTG  
ATTGTATTGTTGAAAAAGTTTGTGTTTGGCTGGGAGTGTGTGCCTGCGTGGGTGTGTGCGTGTGTTGGGT  
TTTTTCTTTAACTGACAAGCCATCTTGAGTGGTCTATGGGCCACTGCTTTTCCCTTTGTGAGTCAATACA  
TAGTGCTGCTGTGTGCTTTTTTTGTGTGTAATTTTATTAATTTTAGTTTTTTATTAAATAAA  
TTTGACTTTTCTGTAATTCAGGTTTTTCTTTTTTTGTACCATTTTAAAGTTAGTATCTTTTGATATGCA  
TATTTGTTTATGGTAAAAAATTTATAACGTGTTCAATATTTTCTTTTCCCCCATTAATCAGTTTCATTAGA  
AATATTTTAAATCAACTATTTTGTGAAGCCATGAGTTCAGAAAGTAAAGGTGACATCGGAAAAATAAT  
CAAAAGCTATTTAAAGCATCTATAAGGTGCTCTCTTTCTGTCTTCTACAGATGAGTCACACCTTTGAGCT  
TAATCTTTGAAAGGTAGAGAATAAATTGATTTTTATAAATACTGCAATCAGGCTTTTGTTCCTTTT  
CAGATATCTTGGACAAATCACATATTTTAAATTTGTCTGTATTTATTGGTTTTGCAGAAGAAGGCAT  
CGTCATGCACAGTATTTGTAATTAAGCAATCATTGTTTAAAAAGGCAGTTTGCAAAAAATGTTTTT  
GGTCTTTTATAATTCTCATTAAAGAATATCTGTCAAATAAAAAAAAAAAAAAAAAAAAAAAAAAAAA  
AAAAA

Human SIAH1 mRNA sequence - var2 (public gi: 4506946) (SEQ ID NO: 136)  
GCGGCGGCCAGGGGGAGCCGGGGCGGCCGTTGCGGGGCGCGCTCTCGAGAGGCGGCGGCGGCCAGGGTG  
TCCCGTCGGTCTCGGCGCCGGGAAGAGGCGGTGGCGCTGCCCGCGGTGGCGGGGGTTGGCGACGGAGCGC  
GTTGGTGCCAGGACCGGGTCCGAGGCGCGCTCTCCGCCACAGAAATGAGCCGTGACTGCTACAGCA  
TTACCTACCGGTACCTCGAAGTGTCCACCATCCAGAGGGTGCCTGCCCTGACTGGCACAACCTGCATCCA  
ACAATGACTTGGCGAGTCTTTTGTAGTGTCCAGTCTGCTTTGACTATGTGTTACCGCCCATTTCTTCAATG  
TCAGAGTGGCCATCTTGTGTTGTAGCAACTGTGCCCCAAAGCTCACATGTTGTCCAACCTGCGGGGGCCCT  
TTGGGATCCATTGCAACTTGGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCCTGTAAATATGCGT  
CTTCTGGATGTGAAATAACTCTGCCACACACAGAAAAAGCAGACCATGAAGAGCTCTGTGAGTTTAGGCC  
TTATTCCTGTCCGTGCCCTGGTGCTTCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGCCCATCTG  
ATGCATCAGCATAAGTCCATTACAACCCTACAGGAGAGGATATAGTTTTTCTTGCTACAGACATTAATC  
TTCCTGGTGCTGTTGACTGGGTGATGATGCAGTCTGTTTTGGCTTTCACTTCATGTTAGTCTTAGAGAA  
ACAGGAAAAATACGATGGTCACCAGCAGTTCCTCGCAATCGTACAGCTGATAGGAACACGCAAGCAAGCT  
GAAAAATTTTGCTTACCGACTTGAGCTAAATGGTCAATAGGCGACGATTGACTTGGGAAGCGACTCCTCGAT  
CTATTCATGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGACACCAGCATTGCACA  
GCTTTTGCAGAAAATGGCAATTTAGGCATCAATGTAACATTTTCCATGTGTTGAAATGGCAATCAAACA  
TTTTCTGGCCAGTGTAAAAACTTTCAGTTTTCACAGAAAATAAGGCACCCATCTGTCTGCCAACCTAAAC  
TCTTTCGGTAGGTGGAAGCTAGACACATGAAGGTAAATAAAAAGAAAGGCTGTAAATACAGGAAACAGT  
TGCAATGTAGTAACACTAATATATTTTAAAAATAAGTCAACAGTAAACCACTGAAAAAATATATGTATATAC  
ACCCAAGATGGGCATCTTTGTATTAAGAAAGGAAGCATTGTAAATAAATCTGAGTTTGTGTTTGTG  
TAGATTGATTGTATTGTTGAAAAAGTTTGTGTTTTGCCGTGGGAGTGTGTGCCTGCGTGGGTGTGTGCGTG  
TTGGTTTTTCTTAACTGACAAGCCATCTTGAGTGGTCTATGGGCCACTGCTTTTCCCTTTGTGAGTCAAT

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ACATAGTGCTGCTGTGTGCTTTTTTTGTGTGTATTGTGCTAATTTTTATTAATTTTAGTTTTTCATTAAAT  
AAATTTGACTTTTCTGTAATTCAGGTTTTTTCCTTTTTTGTACCATTTTAAAGTTAGTATCTTTTGATAT  
GCATATTTGTTTTATGGTAAAAAATTTATAACGTGTTCAATATTTTCTTTCCCCCATTAATCAGTTCATT  
AGAAATATTTTAAATCAGCTATTTTGTGAAGCCATGAGTTCAGAAAGTAAAGGTGACATCGGAAAAAT  
AATCCCAAGCTATTTAAAGCATCTATAAGGTGCTCTCTTTCTGTCTTCTACAGATGAGTCACACCTTTGA  
GCTTAATCTTGAAGGTTAGAGATAAATTGATTTTTATAAACTAGCAAAATCAGGCTTTTGTTCCTTTTT  
CAGATATCTTGGACAAATCACATATTTTAAATTTGTTCTTGTATTTATTGGTTTTGCAGAAGAAGGCAT  
CGTCATGCACAGTATTTGTAATTAAGCAAAATCATTTGTTTTAAAAAGGCAGTTTGCAAAAAATGTTTTT  
GGTCTTTTATAATTCTCA

Human SIAH1 mRNA sequence - var3 (public gi: 16551141) (SEQ ID NO: 137)

TTTATAATAGCCCTCCAAATGGGTGTGACGTATTTGATTCTATGTCCTAATGACTAGTGATGTTGAGC  
ATTTTCTAGCATTGATTTTTAAGATGTTACCCAAAGACCCCTTGATCAAAATAAGCTGGATTTTTTTAT  
TGAAAAATTATACTCTAGAAATTTAGTTTAACTAGACTTAGGGATATGTGTATTTACTGGTATTCC  
ACGTTTTATGCTATGGGTTTTTAAAACTTCTCAAGTATTAAACTAAAAGCTTTAGGTGCTTTGCTTTATCA  
AGAAATCCTACACTGTCCACTGGAGACATCCATGTTTTTACTTGGCTCTGCCCCCTTTAGTGGTCCCTGTG  
AACCTTACCTCAAACCATGCATCTGGGGCAGAGATCCTTACTTGCTTGGTGGTTACAAATGCAAATACAG  
TGAAGAATGTCATCTTTGTGATTGTTCTGAAATAGTTTCACGAGAAATCCATGACCGTAAAGTACTGTGA  
TAGTGATGTCTACCACTGTGAGCTTCCAGTACTAGGTGATTGGTCTGCATTACAGTGACCAAAATCAGC  
TATGTGGCCAGGTAATTCAGTCTGAGGGCTTTGGATTTTCTTTATGAACACTGAAATGAGGTCAACT  
TGACTATTACTAAGGGACATTTTGCTACAAAGAATGTTAGTTTTGCCAATTCCTTTCCAAATCTAAAT  
TTATTTTAACCAGGATTTTAGATGTAAACATCAAGTAGTTTGGTTGTTTCAATGAAGTAACATGTTTAA  
GCTCACATTATTTGAAGTACTTCAGTTCCTATTGCCATGAAATTTGTATCCAGCAGCTAAAAAAGAGCT  
AAAAAAGAGCTACAGTTAGTCATTATCCAATTTGATGATTTATGGTCCAACACTAATGCTCATTTTTTT  
TGTTTTTTTTTACAAACATTTGGTGGATACCAATGAAAACTGCACCTAAAAAACAATAATGCTGAAAGA  
GGAAGGAAATATCAAAAGGTCTGAATAGACAACAGGCAAAATATGCTTCCACCTACCGAAAGAGTTTTAG  
GTTGGCAGACAGATGGGTGCTTATTTTCTGTGAACTGAAGTTTAAACACTGGCCAGAAAATGTTTGA  
TTGCCATTTCAACACATGGAAATAGTTACATTGATGCCTAAATGCCATTTTCTGCAAAAAGCTGTGCAA  
TGCTGGTGTCAAAGACTAGACAGTCGCTATTCATAATGGCTGTTGCAATTCCTTCATGAATAGATCGAGG  
AGTCGCTTCCCAAGTCAATCGTCGCCTATGACCAATTTAGCTCAAGTCGGTAAGCAAAATTTTCAGTTGC  
TTGCGTGTTTCTATCAGCTGTACGATTGCGAAGAACTGCTGGTGACCATCGTATTTTCTGTCTTCTCTA  
AGACTAACATGAAGTGAAGCCAAACAGGACTGCATCATCCCCAGTCAACAGCACCAGGAAGATTAAT  
GTCTGTAGCAAGAAAACTATATCCTCTCCCTGTAGGGTTGTAATGGACTTATGCTGATGCATCAGATGG  
GGCATTACAGCATCCAGAGAGCCTTGCCATTTACAGGAAGCACCAGGGCACGGACAGGAATAAGGCCTAA  
ACTCACAGGCTCTGCTGCTTTTTCTGTGTGGCAGAGTTATTTACATCCAGAAGACGCAATA  
TTTACAGGGGAAAGTATGAATTAGCCACTTTCTCCATAGCCAAAGTTGCGAATGGATCCCCAAGGGCCC  
CGGCAAGTTGGACAACATGTGAGCTTTGGGCGACAGTTGCTACAAACAAGATGGCCACTCTGACATTGAA  
GAATGGGCGGTAAACACATAGTCAAAGCAGACTGGACACTCAAAAAGACTCGCCAAGTCATTGTTGGATGC  
AGTTGTGCCAGTCAGGGCAGGCACCCTCTGGGATGGTGGACACTTCGAGGTACCGGTAGGTAATGCTGTA  
GCAGTCTGACGGCTCATTTCTGAAATAAATACATAAGGAGGCAGGAGAAAAATAATTATAACCATGACTT  
ACTTTATAAATAATGTTTACATGCCATAGTCCCTTTTAAAGTTTCATACAAAATTTACTGAGCAAAAGAG  
GAAGAAAAATAGGATTAAAAAAGATATT

Human SIAH1 mRNA sequence - var4 (public gi: 21753769) (SEQ ID NO: 138)

TTTACCCCCAAGACAAATAGTGGCCTGCCATTTCCAGCCAGGTAGCTTCTGGGAAAAGTTGCTTGT  
TTTATCTTTGACTCAGCCTGGCTAGTTACATTGTGCGATTATTTCTTCCAGATGATATTTACCTGTAAAT  
AATGTTTATTACTCTGCTGATGAATGTTTTAGCAACGCTGGAGAACCCTAGGCTGCAAGGGGTTCTTCA  
CCTGTTGACTCCATCCCCACCCCAAGTATGGCATATATCTCTGCCGTGCTATCATCTTTATTCTTCCCT  
TTTTTATTGTCTCTTCTGACTGTCTCTCTTGTTCATTATGTCTGACACATATTGTGGATTGAAAGTAG  
AACAGAAAGATATACCTTCTCTACCAGACTAAAAAGTTTTGAGATGGCCCTCCATTTCTCCCATGCCTCA  
CTTCACCTTAGTTGTGTTTTTATTTATTTTATATTTTTCGCCACCTTCACTAGCGAGTACATCCCCCTCAC  
TCTTGAGGTGGGCACTGATCAGTAGGAAATAAGATTAACTAGCTGGCTGGTGATAATTGGGGGGAAGACT  
TAATTAGATAGAGATGGATAATGGGATGGCAGCAGACCTTTCCCTTGTGACCTTCCCCCTCATTTCCAA  
AATACACCTCTAGAGTAGATAATTGCTTACCATTAAAGAAGAGTTAATGGAAGGTGATACTCTGATTCTTT  
GGCATTGGAACATCAATCCGCGGTATCCTCGGATTAGTTCTAGGACCCCTTCTCCATACCAAAAC  
CTGAGGATGCTCAAGTCCCTGATAGAAAATGGTGTCTATTTGTATGTGCATATTCTCTTGTATAATTTA  
AGTGATCTCTGGATTACTTAATACAATGTAAACAATATGTAATAGTTGTTATAGACTGTATTTAAAAA  
TTTTGTATTCTTTTATAAATTTTTCTGAATATTTTCAATCCATGGCTGGTGAAGTCTCGGATGCGAGCCG  
TGTGGATACAGAGTGCCGATTTTATACAGGAGTTACCTGTAACCTCCCTGTACCTATCAACAGCTGACTC  
CAAATTAGAAAGAAATAGAGTAAGGGAGCCTCAGGGAGAGTCTAGCAAAACGGATTTCGATTAACTTCA  
GTTCTTGTATAGTTTCTTTAGTTGTTTATGGTCCATTTTCTATTTTAGCATTTATTATTCTATGTAGTC  
TATCCAAAGACGATTAAAGGAGTTCCACATGTTTTCCGGAACATTTTGAAGAGAGCTTATCCAGTGTA

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CAGATCCTAATAAAGTGCACATTTCAGTGTAAATTTTATTTTTTTAATATCTTTTTTAATCCTATTTTTCTT  
 CCTCTTTTGCTCAGTAAATTTTGTATGAACTTTAAAGGACTTATGGCATGTAAACATTATTTATAAAG  
 TAAGTCATGGTTATAATTATTTTCTCCTGCCTCCTTATGTATTTATTTTTCAGAAATGAGCCGTCAGACTG  
 CTACAGCATTACCTACCGGTACCTCGAAGTGTCCACCATCCCAGAGGGTGCCTGCCCTGACTGGCACAAC  
 TGCATCCAACAATGACTTGGCGAGTCTTTTGTAGTGTCCAGTCTGCTTTGACTATGTGTACCGCCCAT  
 CTTCAATGTGAGAGTGGCCATCTTGTGTGTAGCAACTGTGCGCCAAAGCTCACATGTTGTCCAACCTGCC  
 GGGGCCCTTTGGGATCCATTTCGCAACTTGGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCCTGTAA  
 ATATGCGTCTTCTGGATGTGAAATAACTCTGCCACACACAGAAAAAGCAGACCATGAAGAGCTTGTGAG  
 TTTAGGCCTTATTCTGTCCGTGCCCTGGTGTCTCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGC  
 CCCATCTGATGCATCAGCATAAGTCCATTACAACCTACAGGGAGAGGATATAGTTTTCTTGCTACAGA  
 CATTAATCTTCTGGTGCTGTTGACTGGGTGATGATGCAGTCTGTGTTTGGCTTTCACTTCATGTTAGTC  
 TTAGAGAAACAGGAAAAATACGATGGTCAACAGCAGTTCTTCGCAATCGTACAGCTGATAGGAACACGCA  
 AGCAAGCTGAAAAATTTGCTTACCGACTTGAGCTAAATGGTCATAGGCGACGATTGACTTGGGAAGCGAC  
 TCCCTCGATCTATTTCATGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGCCACCAGC  
 ATTGCACAGCTTTTTGCAGAAAAATGGCAATTTAGGCATCAATGTAACATTTCCATGTGTTGAAATGGCA  
 ATCAAAACATTTTTCTGGCCAGTGTTTAAACTTTCAGTTTTCAGAAAAATAAGGCACCCATCTGTCTGCCAA  
 CCTAAACTCTTTCCGGTAGGTGGAAGCTAGACACATGAAGGTAAATAAAAAGAAAGGCTGTTAAATACAG  
 GAAACAGTTGCATGTAGTAACACTAATATATTTAAAAATAAGTCAACAGTAAACCACTGAAAAATATAT  
 GTATATACACCCCAAGATGGGCATCTTTGTATTAAAGAAAGGAAGCATTGTAATAATCTGAGTTTGT  
 GTTTGTTGTAGATTGATTGTATTGTTGAAAAAGTTTGTTTTTGCGTGGGAGTGTGTGCCTGCGTGGGTGT  
 GTGCGTGTGTTGGGTTTTTTCTTTAACTGACAAGCCATCTTGAGTGGTCATGGGCCACTGCTTTTCCCT  
 TTGTGAGTCAATACATAGTGTCTGTGTGCTTTTTTGTGTGATTGCTAATTTTTATTAAATTTTAGT  
 TTTTCATTAAATAAATTTGACTTTTCTGT

Human SIAH1 mRNA sequence - var5 (public gi: 3041824) (SEQ ID NO: 139)

ATGAGCCGTCAGACTGCTACAGCATTACCTACCGGTACCTCGAAGTGTCCACCATCCCAGAGGGTGCCTG  
 CCCTGACTGGCACAACCTGCATCCAACAATGACTTGGCGAGTCTTTTTGAGTGTCCAGTCTGCTTTGACTA  
 TGTGTTACCGCCCATTTCAATGTGAGAGTGGCCATCTTGTGTTGTAGCAACTGTGCGCCAAAGCTCACA  
 TGTGTCCAACCTTGCCGGGGCCCTTTGGGATCCATTTCGCAACTTGGCTATGGAGAAAGTGGCTAATTCAG  
 TACTTTTCCCCTGTAAATATGCGTCTTCTGGATGTGAAATAACTCTGCCACACACAGAAAAAGCAGACCA  
 TGAAGAGCTCTGTGAGTTTAGGCCTTATTCTGTCCGTGCCCTGGTCTTCTGTAAATGGCAAGGCTCT  
 CTGGATGCTGTAATGCCCCATCTGATGCATCAGCATAAGTCCATTACAACCTACAGGGAGAGGATATAG  
 TTTTTCTTGCTACAGACATTAATCTTCTGGTGCTGTTGACTGGGTGATGATGCAGTCTGTGTTTGGCTT  
 TCACTTCATGTTAGTCTTAGAGAAACAGGAAAAATACGATGGTCACCAGCAGTCTTTCGCAATCGTACAG  
 CTGATAGGAACACGCAAGCTGAAATTTTGTCTACCGACTTGAGCTAAATGGTCATAGGCGACGAT  
 TGACTTGGGAAGCGACTCCTCGATCTATTTCATGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCT  
 AGTCTTTGACACCAGCATTGCACAGCTTTTTGCAGAAAAATGGCAATTTAGGCATCAATGTAACATTTTCC  
 ATGTGTTGAAATGGCAATCAACATTTTCTGGCCAGTGTTTAAACTTCAGTTTCACAGAAAAATAGGCA  
 CCCATCTGTCTGCCAACCTAAACTCTTTCCGGTAGGTAGAAGCTAGACACATGAAGGTAAATAAAAAGAA  
 AGGCTGTTAAATACAGGAACAGTTCATGTAGTAACACTAATATATTTAAAAATAAGTCAACAGTAAAC  
 CACTGAAAAATATATGTATATACACCCCAAGATGGGCATCTTTGTATTAAAGAAAGGAAGCATTGTAAAA  
 TAATCTGAGTTTTGTGTTTGTGTAGATTGATTGTATTGTTGAAAAAGTTTGTTTTTGCGTGGGAGTGT  
 GTGCCTGCGTGGGTGTGTGCGTGTGTTGGGTTTTTTTCTTTAACTGACAAGCCATCTTGAGTGGTCATGG  
 GCCACTGCTTTTCCCTTTGTGAGTCAATACATAGTGTCTGTGAAGCCGTTTTTGTGTGTATTGCTAAT  
 TTTTATTAAATTTAGTTTTTTCAATAAATAAATTTGACTTTTCTGTAATTCAGGTTTTTCTTTTTTTGTGTA  
 CCATTTTAAAGTTAGTATCTTTTGATATGGCATATTTGTTTATGGTAAAAAATTTATAACGGGTTCAATA  
 TTTTCTTTTCCCCCATTAATCAAGTCCATTGGAATATTTTAAACCAGCCTATTTTGGTGAACCCATGA  
 GTTCCCAGAAAGTAAAGGTGACACCCGGAATAAATCCAAAGCCTATTTAAAGCCACCTATAAGGTGC  
 CCCCCTTCTCTGTCTTCTACAGATGAGTCAACCTTTGAGCCTTAACCTTTGAAAGGTTAGAGAATAAA  
 TTGATTTTTATAAATACTGCAATCCAGGCTTTTGTTCCTTTTCCAGATATCCTTGACAAATCACAT  
 ATTTTAAATTTGTTCTTGTATTATTGTTTTTGGTAAAGGAAGGCATCGTCATGCACAGTATTGTAATT  
 AAAAGCAAATTCATTGTTTAAAAAGGCAGTTTGCAAAAAATGTTTTTGGTCTTTTATAATTCTCA

Human SIAH1 mRNA sequence - var6 (public gi: 17390431) (SEQ ID NO: 140)

CGGCGCCGGGAAGAGGCGGTGGCGCTGCCCCGGTGGCGGGGGTTGGCGACGGAGCGCGTTGGTGCCAGG  
 ACCGGGGTCCGAGGCGCGCTCTCCGCCACAGAAATGAGCCGTGAGCTGCTACAGCATTACCTACCGGT  
 ACCTCGAAGTGTCCACCATCCAGAGGGTGCCTGCCCTGACTGGCACAACCTGCATCCAACAATGACTTGG  
 CGAGTCTTTTGTAGTGTCCAGTCTGCTTTGACTATGTGTTACCGCCATTCTTCAATGTGAGAGTGGCCA  
 TCTTGTGTTGTAGCAACTGTGCGCCAAAGCTCACATGTTGTCCAACCTTGGCGGGGCCCTTTGGGATCCATT  
 CGCAACTTGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCCTGTAAATATGCGTCTTCTGGATGTG  
 AAATACTCTGCCACACACAGAAAAAGCAGACCATGAAGAGCTCTGTGAGTTTAGGCCTTATTCTGTGCC  
 GTGCCCTGGTGCTTCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGCCCCATCTGATGCATCAGCAT

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AAGTCCATTACAACCCTACAGGGAGAGGATATAGTTTTCTTGCTACAGACATTAATCTTCCTGGTGCTG  
 TTGACTGGGTGATGATGCAGTCCTGTTTTGGCTTTCACTTCATGTTAGTCTTAGAGAAACAGGAAAAATA  
 CGATGGTCACCAGCAGTTCTTCGCAATCGTACAGCTGATAGGAACACGCAAGCAAGCTGAAAATTTTGCT  
 TACCGACTTGAGCTAAATGGTCATAGGCGACGATTGACTTGGGAAGCGACTCCTCGATCTATTCATGAAG  
 GAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGACACCAGCATTGCACAGCTTTTTTGACAG  
 AAAATGGCAATTTAGGCATCAATGTAACATTTCCATGTGTTGAAATGGCAATCAAACATTTTCTGGCCA  
 GTGTTTAAAACTTCAGTTTCACAGAAAATAAGGCACCCATCTGTCTGCCAACCTAAAACTCTTTCCGGTAG  
 GTGGAAGCTAGACACATGAAGGTAATAAAAAAGAAAGGCTGTTAAATACAGGAAACAGTTGCATGTAGTA  
 ACACCTAATATATTTAAAAATAAGTCAACAGTAAACCAGTGAATAATATATGTATATACACCCAAGATGG  
 GCATCTTTTGTATTAAAGAAAGGAAGCATTGTAAAATAATTCTGAGTTTTGTGTTTGTGTAGATTGATTG  
 TATTGTTGAAAAAGTTTGTGTTTTGCGTGGGAGTGTGTGCCTGCGTGGGTGTGTGCGTGTGTTGGGTTTTTT  
 TCCTTTAACTGACAAGCCATCTTGAGTGGTCATGGGCCACTGCTTTTCCCTTTGTGAGTCAATACATAGT  
 GCTGCTGTGTGCTTTTTTGTGTGTATTGCTAATTTTTATTAAATTTTAGTTTTTCATTAAATAAATTTG  
 ACTTTTCTGTAATTCAGGTTTTTCCCTTTTTTGTACCATTTTAAAGTTAGTATCTTTTGATATGCATATT  
 TGTATTATGGTAAAAAATTTATAACGTGTTCAATATTTTTCTTTTCCCCCATTAAATCAGTTCATTAGAAATA  
 TTTTAAATCAGCTATTTTGTGAAGCCATGAGTTCAGAAAGTAAAGGTGACATCGGAAAAATAATCAAA  
 AGCTATTTAAAGCATCTATAAGGTGCTCTCTTTCTGTCTTCTACAGATGAGTCACACCTTTGAGCTTAAT  
 CTTTGAAAGGTAGAGAATAAATGATTTTTATAAATACTGCAAAATCAGGCTTTTGTTCCTTTTTTCAGA  
 TATCTTTGGACAAATCACATATTTTAAAAATTTGTTCTTTGTATTATTGGTTTTGTCAGAAGAAGGCATCGTC  
 ATGCACAGTATTTGTAATTAAGCAATCATTTGTTTAAAAAGGCAGTTTGCAAAAAATGTTTTTGGTCT  
 TTTTATAATTCTCATTAAAGAATATCTGGCCATTTTTTAAAAAATAAAAAAAAAAAAAAAAAAAAAA  
 AAAA

Human SIAH1 mRNA sequence - var7 (public gi: 23274141) (SEQ ID NO: 141)

GTCCCGTCGGTCTCGGCGCCGGGAAGAGGCGGTGGCGCTGCCGCGGTGGCGGGGGTTGGCGACGGAGCG  
 CGTTGGTGCCAGGACCGGGTCCGAGGCGCGCTCTCCGCCACAGAAATGAGCCGTCAGACTGCTACAGC  
 ATTACCTACCGGTACCTCGAAGTGTCCACCATCCCAGAGGTGCCTGCCCTGACTGGCACAATGCATCC  
 AACAAATGACTTGGCGAGTCTTTTTGAGTGTCCAGTCTGCTTTGACTATGTGTACCGCCCATCTTCAAT  
 GTCAGAGTGGCCATCTTGTGTTGTAGCAACTGTGCCCCAAAGCTCACATGTTGTCCAACCTGCGGGGGCCC  
 TTTGGGATCCATTGCAACTTGGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCTGTAAATATGCG  
 TCTTCTGGATGTGAAATAACTCTGCCACACACAGAAAAGCAGACCATGAAGAGCTCTGTGAGTTTAGGC  
 CTATTCTGTGTCGCTGCCCTGGTGCTTCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGCCCCATCT  
 GATGCATCAGCATAAGTCCATTACAACCCTACAGGGAGAGGATATAGTTTTTCTTGCTACAGACATTAAT  
 CTTCTGCTGTGTTGACTGGGTGATGATGCAGTCTGTTTTGGCTTTCACTTCATGTTAGTCTTAGAGA  
 AACAGGAAAAATACGATGGTCACCAGCAGTTCTTCGCAATCGTACAGCTGATAGGAACACGCAAGCAAGC  
 TGAAATTTTGCTTACCGACTTGAGCTAAATGGTCATAGGCGACGATTGACTTGGGAAGCGACTCCTCGA  
 TCTATTCAATGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGACACCAGCATTGCAC  
 AGCTTTTTCAGAAAAATGGCAATTTAGGCATCAATGTAACATTTCCATGTGTTGAAATGGCAATCAAA  
 ATTTTCTGGCCAGTGTTTAAAACTTCAGTTTCACAGAAAATAAGGCACCCATCTGTCTGCCAACCTAAAA  
 CTCTTTTCGGTAGGTGGAAGCTAGACACATGAAGGTAAATAAAAAGAAAGGCTGTTAAATACAGGAAACAG  
 TTGCATGTAGTAACATAATATATTTAAAAATAAGTCAACAGTAAACCAGTGAATAATATATGTATATA  
 CACCAAGATGGGCATCTTTGTATTAAAGAAAGGAAGCATTGTAAAATAATTCTGAGTTTTGTGTTTGT  
 GTAGATTGATTGTATTGTTGAAAAAGTTTTGTTTTTGGTGGGAGTGTGTGCTGCGTGGGTGTGTGCGTG  
 TTTGGGTTTTTTTCTTTAACTGACAAGCCATCTTGAGTGGTCATGGGCCACTGCTTTTCCCTTTGTGAG  
 TCAATACATAGTGTCTGTGTGCTTTTTTTGTGTGATTGCTAATTTTATTAAATTTTAGTTTTTCAT  
 TAAATAAATTTGACTTTTCTGTAAAAAATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SIAH1 Protein sequence - var1 (public gi: 27503514) (SEQ ID NO: 271)

MTGKATPPSLYSWRGVLTCLPAARTRKRKEMSRQTALPTGTGTSKPPSQRPVLPALTGTTASNNDLASLF  
 ECPVCFDYVLPPIQLQCQSGHLVCSNCRPKLTCCPTCRGPLGSIRNLAMEKVANSVLPCKYASSGCEITL  
 PHTEKADHEELCEFRPYSCPCPGASCKWQGS L DAVMPHLMHQHKSITTLQGEDIVFLATDINLPGAVDWV  
 MMQSCFGFHFMLVLEKQEKYDGHQQFFAIVQLIGTRKQAE NFAYRLELNGHRRRLTWEATPRSIHEGIAT  
 AIMNSDCLVFDTSIAQLFAENGLGINVTISM C

Human SIAH1 Protein sequence - var2 (public gi: 4506947) (SEQ ID NO: 272)

MSRQTALPTGTGTSKPPSQRPVLPALTGTTASNNDLASLFECPVCFDYVLPPIQLQCQSGHLVCSNCRPKLT  
 CCPTCRGPLGSIRNLAMEKVANSVLPCKYASSGCEITLPHTEKADHEELCEFRPYSCPCPGASCKWQGS  
 L DAVMPHLMHQHKSITTLQGEDIVFLATDINLPGAVDWVMMQSCFGFHFMLVLEKQEKYDGHQQFFAIVQ  
 LIGTRKQAE NFAYRLELNGHRRRLTWEATPRSIHEGIATAIMNSDCLVFDTSIAQLFAENGLGINVTIS  
 MC

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Unigene Name: SMN1 Unigene ID: Hs.288986 Clone ID: GD\_1114

Human SMN1 mRNA sequence - var1 (public gi: 624185) (SEQ ID NO: 142)

CGGGGCCCCACGCTGCGCATCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCC  
CGGAGCAGGAGGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGA  
TACAGCACTGATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATT  
TGTGAAACTTCGGGTAAACCAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGA  
AGAACTACTGCAGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGG  
TTGCATTTACCCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAAACCTGTGTTGTGGTTTACACTGGA  
TATGGAATAGAGAGGAGCAAAATCTGTCGGATCTACTTTCCCAATCTGTGAAGTAGCTAATAATATAG  
AACAGAATGCTCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCC  
TGGAAATAAATCAGATAACATCAAGCCCAATCTGCTCCATGGAACCTTTTTCTCCCTCCACCACCCCCC  
ATGCCAGGGCCAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCATGGGCCACCACCGCCACCAGCCAC  
CACCACCACCCCACTTACTATCATGCTGGCTGCCTCCATTTCTTCTGGACCACCAATAATTCCCCCACC  
ACCTCCCATATGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTTCATGGTACATG  
AGTGGCTATCATACTGGCTATTATATATGGGTTTCAGACAAAATCAAAAAGAAGGAAGGTGCTCACATTTCT  
TAAATTAAGGAGAAATGCTGGCATAGAGCAGCACTAAATGACACCCTAAAGAAACGATCAGACAGATCT  
GGAATGTGAAGCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTGGGAAAGAAAAA  
GGAAGTGAATGGGTAACTCTTCTTGATTAAGTATGTAATAACCAAAATGCAATGTGAAATATTTTAC  
TGGACTCTTTTGA AAAACCATCTGTAAAAGACTGGGGTGGGGTGGGAGGCCAGCACGGTGGTGAGGCAG  
TTGAGAAAATTTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGGCCTGTG  
AGAAGGGTGTGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATTTAGGAATGAAGTGTAG  
AGTGTCTTAAATGTTTCAAATGGTTTAAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAAT  
CTAACTGGTGGACATGGCTGTTTCAATGTACTGTTTTTTTCTATCTTCTATATGTTTAAAGTATATAATA  
AAAAATTTAATTTTTTTTTTA

Human SMN1 mRNA sequence - var2 (public gi: 15929773) (SEQ ID NO: 143)

GGCCCCACGCTGCGCACCCGCGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGG  
AGCAGGAGGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATAC  
AGCACTGATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTGT  
GAAACTTCGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAGA  
ATACTGCAGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTG  
CATTTACCCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAAACCTGTGTTGTGGTTTACATGGATAT  
GGAAATAGAGAGGAGCAAAATCTGTCCGATCTACTTTCCCAATCTGTGAAGTAGCTAATAATATAGAAC  
AGAATGCTCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCTTGG  
AAATAAATCAGATAACATCAAGCCCAATCTGCTCCATGGAACCTTTTTCTCCCTCCACCACCCCCCATG  
CCAGGGCCAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCATGGGCCACCACCGCCACCAGCCACCAC  
CACCACCCCACTTACTATCATGCTGGCTGCCTCCATTTCTTCTGGACCACCAATAATTCCCCCACCACC  
TCCCATATGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTTCATGGTACATGAGT  
GGCTATCATACTGGCTATTATATGGGTTT TAGACAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAA  
ATTAAGGAGAAATGCTGGCATAGAGCAGCACTAAATGACACCCTAAAGAAACGATCAGACAGATCTGGA  
ATGTGAAGCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTGGGAAAGAAAAAGGA  
AGTGAATGGGTAACTCTTCTTGATTAAAAGTTATGTAATAACCAAAATGCAATGTGAAATATTTTACTGG  
ACTCTATTTTGA AAAACCATCTGTAAAAGACTGAGGTGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGT  
TGAGAAAATTTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGAGCTGTGA  
GAAGGGTGTGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATTTAGGAATGAAGTGTAGA  
GTGTCTTAAATGTTTCAAATGGTTTAAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATC  
TAAGTGGTGGACATGGCTGTTTCAATGTACTGTTTTTTTCTATCTTCTATATGTTTAAAGTATATAATA  
AAATATTTAATTTTTTTTTTAAAAA AAAAAAAAAAAAAAAAAAAAAAAAAA

Human SMN1 mRNA sequence - var3 (public gi: 13259511) (SEQ ID NO: 144)

CCACAAATGTGGGAGGGCGATAACCACTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCTCCCGGCC  
ACCGTACTGTTCCGCTCCAGAAAGCCCCGGGCGGCGGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA  
CGCTGCGCACCCGCGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA  
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG  
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT  
CGGGTAAACCAAAAACCACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAGAATACTGC  
AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC  
CCAGCTACCAATTGCTTCAATTGATTTTAAGAGAGAAAACCTGTGTTGTGGTTTACACTGGATATGGAATA  
GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC

TCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAA  
 TCAGATAACATCAAGCCCAATCTGCTCCATGGAACCTTTTCTCCCTCCACCACCCCCCATGCCAGGGC  
 CAAGACTGGGACCAGGAAAGATAATTCCCCACCACCTCCCATATGTCCAGATTCTCTTGATGATGCTGA  
 TGGTTTGGGAAGTATGTTAATTTTCATGGTACATGAGTGGCTATCATACTGGCTATTATATGGGTTTCAGA  
 CAAAATCAAAAAGAAGGAAGGTGCTCACATTCTTAAATTAAGGAGAAATGCTGGCATAGAGCAGCACTA  
 AATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAAGCGTTATAGAAGATAACTGGCCTCAT  
 TTCTTCAAAATATCAAGTGTGGGAAAGAAAAAGGAAGTGAATGGGTAACCTCTTCTTGATTAAAAGTT  
 ATGTAATAACCAATGCAATGTGAAATATTTTACTGGACTCTTTGAAAAACCATCTGTAAAAGACTGGG  
 GTGGGGGTGGGAGGCCAGCGTGGTGAGGCAGTTGAGAAAAATTTGAATGTGGATTAGATTTTGAATGA  
 TATTGGATAATTATTGGTAATTTTATGGCCTGTGAGAAGGGTGTGTAGTTTATAAAAGACTGTCTTAAT  
 TTGCATACTTAAGCATTAGGAATGAAGTGTAGAGTGTCTTAAATGTTTCAAATGGTTTAAACAAAATG  
 TATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTGGACATGGCTGTTTCATTGTACTGTTT  
 TTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTAATTTTTTTTTTA

Human SMN1 mRNA sequence - var4 (public gi: 13111817) (SEQ ID NO: 145)

GGGGCCCCACGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCC  
 GGAGCAGGAGGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGAT  
 ACAGCACTGATAAAAGCATATGATAAAGCTGTGGCTTCATTAAAGCATGCTCTAAAGAATGGTGACATTT  
 GTGAAACTTCGGGTAAACCAAAAACACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAA  
 GAATACTGCAGCTTCCTTACAAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTGGTCAGAAAGACTGGG  
 TGCATTTACCCAGCTACCATTTGCTTCAATTGATTTTAAAGAGAGAAACCTGTGTTGTGGTTTACACTGGAT  
 ATGGAATAGAGAGGAGCAAAATCTGTCCGATCTACTTTCCCAATCTGTGAAGTAGCTAATAATATAGA  
 ACAGAATGCTCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCT  
 GGAAATAAATCAGATAACATCAAGCCCAATCTGCTCCATGGAACCTTTTTCTCCCTCCACCACCCCCCA  
 TGCCAGGGCCAAGACTGGGACCAGGAAGCCAGGTCTAAATTCATGGCCACCACCGCCACCAGCCACC  
 ACCACCACCCCACTTACTATCATGTGCTGCCTCCATTCTCTTGACCACCAATAATTCGCCACCA  
 CCTCCCATATGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTTCATGGTACATGA  
 GTGGCTATCATACTGGCTATTATATGAAATGCTGGCATAGAGCAGCACTAAATGACACCACTAAAGAAA  
 CGATCAGACAGATCTGGAATGTGAAGCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTG  
 TTGGGAAAGAAAAAGGAAGTGAATGGGTAACCTCTTCTTGATTAAAAGTTATGTAATAACCAATGCAA  
 TGTGAAATATTTTACTGGACTCTATTTGAAAAACCATCTGTAAAGACTGAGGTGGGGGTGGGAGGCCA  
 GCACGGTGGTGAGGCAGTTGAGAAAAATTTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGG  
 TAATTTTATGAGCTGTGAGAAGGGTGTGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATT  
 TAGGAATGAAGTGTAGAGTGTCTTAAATGTTTCAAATGGTTTAAACAAAATGTATGTGAGGCGTATGTG  
 GCAAAATGTTACAGAATCTAACTGGTGGACATGGCTGTTTCATTGTACTGTTTTTTCTATCTTCTATATG  
 TTTAAAAGTATAATAAAAATATTTAATTTTTTTTTTAAAAA

Human SMN1 mRNA sequence - var5 (public gi: 13259515) (SEQ ID NO: 146)

CCACAAATGTGGGAGGGCGATAACCACTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCTCCCGGCC  
 ACCGTACTGTTCCGCTCCCAGAAAGCCCCGGGCGGCGGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA  
 CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA  
 GGATTCGCTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG  
 ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAACTT  
 CGGGTAAACCAAAAACACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAACTACTGC  
 AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTGGTTCAGAAAGACGGTTGCATTTAC  
 CCAGCTACCATTTGCTTCAATTGATTTTAAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA  
 GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC  
 TCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAA  
 TCAGATAACATCAAGCCCAATCTGCTCCATGGAACCTTTTTCTCCCTCCACCACCCCCCATGCCAGGGC  
 CAAGACTGGGACCAGGAAAGCCAGGTCTAAATTCATGGCCACCACCGCCACCAGCCACCACCACC  
 CCACTTACTATCATGCTGGCTGCCTCCATTTCTCTTGACCACCAATAATTCGCCACCACCTCCCATATC  
 TGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTTCATGGTACATGAGTGGCTATC  
 ATACTGGCTATTATATGGGTTTCAGACAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAAATTAAGG  
 AGAAATGCTGGCATAGAGCAGCACTAAATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAA  
 GCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTGGGAAAGAAAAAGGAAGTGGAA  
 TGGGTAACCTCTTCTTGATTAAAAGTTATGTAATAACCAATGCAATGTGAAATATTTTACTGGACTCTTT  
 TGAAAAACCATCTGTAAAAGACTGGGGTGGGGGTGGGAGGCCAGCAGGTGGTGAGGCAGTTGAGAAAAAT  
 TTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTATGGCCTGTGAGAAGGGTGT  
 TGTAAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATTAGGAATGAAGTGTAGAGTGTCTTAA  
 AATGTTTCAAATGGTTTAAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTG  
 GACATGGCTGTTTCATTGTACTGTTTTTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTA  
 ATTTTTTTTTTA

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Human SMN1 Protein sequence - var1 (public gi: 13259512) (SEQ ID NO: 273)  
 MAMSSGGSGGGVPEQEDSVLFRRGTGQSDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP  
 KRKPAKKNKSQKKNATAASLQQWKVGDKCSAIWSEDDGCIYPATIASIDFKRETGVVYTYGNGNREEQNLS  
 LLSPICEVANNIEQNAQENENESQVSTDESENRSRSPGNKSDNIKPKSAPWNSFLPPPPMPGPRGLPGPKI  
 IPPPPPICPDSLDDADALGSM LISWMSGYHTGYMGRQNKQKEGRCSHSLN

Human SMN1 Protein sequence - var2 (public gi: 12654181) (SEQ ID NO: 274)  
 MAMSSGGSGGGVPEQEDSVLFRRGTGQSDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP  
 KRKPAKKNKSQKKNATAASLQQWKVGDKCSAIWSEDDGCIYPATIASIDFKRETGVVYTYGNGNREEQNLS  
 LLSPICEVANNIEQNAQENENESQVSTDESENRSRSPGNKSDNIKPKSAPWNSFLPPPPMPGPRGLPGPKI  
 GLKFNGPPPPPPPPHLLSCWLPFPSPGPPIIPPPPICPDSLDDADALGSM LISWMSGYHTGYMEM  
 LA

Human SMN1 Protein sequence - var3 (public gi: 4507091) (SEQ ID NO: 275)  
 MAMSSGGSGGGVPEQEDSVLFRRGTGQSDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP  
 KRKPAKKNKSQKKNATAASLQQWKVGDKCSAIWSEDDGCIYPATIASIDFKRETGVVYTYGNGNREEQNLS  
 LLSPICEVANNIEQNAQENENESQVSTDESENRSRSPGNKSDNIKPKSAPWNSFLPPPPMPGPRGLPGPKI  
 GLKFNGPPPPPPPPHLLSCWLPFPSPGPPIIPPPPICPDSLDDADALGSM LISWMSGYHTGYMGMF  
 RQNKQKEGRCSHSLN

Human SMN2 mRNA sequence - var1 (public gi: 736410) (SEQ ID NO: 147)  
 GCGATGAGCAGCGCGGCGAGTGGTGGCGGCGTCCCGGAGCAGGAGGATTCCGTGCTGTTCCGGCGCGGCA  
 CAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTGATAAAAGCATATGATAAAGCTGTGGC  
 TTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTTCGGGTAAACCAAAAACACACCTAAA  
 AGAAAACTGCTAAGAAGAATAAAAGCCAAAAGAAGAACTGCAGCTTCCTTACAACAGTGGAAGTTG  
 GGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTACCCAGCTACCATTGCTTCAATTGATTT  
 TAAGAGAGAACTGTGTTGTGGTTTACACTGGATATGGAAATAGAGAGGAGCAAAATCTGTCCGATCTA  
 CTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGCTCAAGAGAATGAAAATGAAAGCCAAAG  
 TTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAATCAGATAACATCAAGCCCCAAATCTGC  
 TCCATGGAACCTCTTTCTCCCTCCACCACCCCCATGGAACTGCCAGGGCCAAAGACTGGGACCAAGCCAGGT  
 CTAAATTCATGGCCCCACCACCGCCACCACCCACCCACTTACTATCATGCTGGCTGCCTC  
 CATTTCTTCTTGACCACCAATAATTCCTCCACCACCTCCCATATGTCCAGATTCTCTTGATGATGCTGA  
 TGCTTTGGGAAGTATGTTAATTTTCATGGTACATGAGTGGCTATCATACTGGCTATTATATGGGTTTTAGA  
 CAAATCAAAAAGAGGAAGGTGCTCACATTCCTTAAATTAAGGAGAAATGCTGGCATAGAGCAGCACTA  
 AATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAAGCGTTATAGAAGATAACTGGCCTCAT  
 TTCTTCAAAATATCAAGTGTGGGAAAGAAAAAGGAAGTGAATGGGTAACCTCTTCTTGATTAAAGTT  
 ATGTAATAACCAATGCAATGTGAAATATTTTACTGGACTCTATTTTGAAAACCATCTGTAAAGACTG  
 AGGTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGTTGAGAAAATTTGAATGTGGATTAGACTTTGAAT  
 GATATTGGATAATTATTGGTAATTTTATGAGCTGTGAGAAGGGTGTGTAGTTTATAAAGACTGTCTTA  
 ATTTGCATCTTAAGCACTTAGGAATGAAGTGTAGAGTGTCTTAAATGTTTCAAATGGTTTAAACAAA  
 TGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTGGACATGGCTGTTTATTGTACTGTT  
 TTTTCTATCTTCTATATGTTTAAAGTATATAATAAAATATTTAATTTTTTTTAAAAA

Human SMN2 mRNA sequence - var2 (public gi: 13259530) (SEQ ID NO: 148)  
 CCACAAATGTGGGAGGGCGATAACCACTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCCTCCCGGCC  
 ACCGTACTGTTCCGCTCCAGAGCCCGGGCGGCGGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA  
 CGCTGCGCACCCGCGGGTTTGCATGCGGATGAGCAGCGCGGCGAGTGGTGGCGGCGTCCCGGAGCAGGA  
 GGATTCCGTGCTGTTCCGGCGGCGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG  
 ATAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAACTT  
 CGGGTAAACCAAAAACACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAACTGTC  
 AGCTTCCTTACAACAGTGGAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTAC  
 CCAGCTACCATTGCTTCAATTGATTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA  
 GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC  
 TCAAGAGAATGAAAATGAAAGCCAGTTTCAACAGATGAAAGTGAGAAGTCCAGGTCTCCTGGAAATAAA  
 TCAGATAACATCAAGCCCAATCTGCTCCATGGAACCTTTTCTCCCTCCACCACCCCATGCCAGGGC  
 CAAGACTGGGACAGGAAGATAATTCCTCCACCACCTCCCATATGTCCAGATTCTCTTGATGATGCTGA  
 TGCTTTGGGAAGTATGTTAATTTTCATGGTACATGAGTGGCTATCATACTGGCTATTATATGGAAATGCTG  
 GCATAGAGCAGCACTAAATGACACCCTAAAGAAACGATCAGACAGATCTGGAATGTGAAGCGTTATAGA  
 AGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTGGGAAAGAAAAAGGAAGTGAATGGGTAACCTC  
 TTCTTGATTAAAGTTATGTAATAACCAATGCAATGTGAAATATTTTACTGGACTCTTTTGA AAAACCA

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TCTGTAAAGACTGAGGTGGGGTGGGAGGCCAGCAAGGTGGTGAGGCAGTTGAGAAAATTTGAATGTGG  
ATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGGCCTGTGAGAAGGGTGTGTAGTTTAT  
AAAAGACTGTCTTAATTTGCATCTTAAGCATTTAGGAATGAAGTGTTAGAGTGCTTTAAAATGTTTCAA  
ATGGTTTAAACAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTGGACATGGCTG  
TTCATTGTACTGTTTTTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTAATTTTTTTTT  
AAA

Human SMN2 mRNA sequence - var3 (public gi: 13259528) (SEQ ID NO: 149)

CCACAAATGTGGGAGGGCGATAAACCCTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCTCTCCGGCC  
ACCGTACTGTTCCGCTCCCAGAAGCCCCGGGCGGCGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA  
CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA  
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG  
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT  
CGGGTAAACCAAAAACACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAACTACTGC  
AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC  
CCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA  
GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC  
TCAAGAGAATGAAAATGAAAGCCAAAGTTTCAACAGATGAAAGTGAGAAGTCCAGGTCTCCTGGAAATAAA  
TCAGATAACATCAAGCCCCAAATCTGCTCCATGGAACCTTTTTCTCCCTCCACCACCCCCCATGCCAGGGC  
CAAGACTGGGACCAAGGAAAGATAAATCTCCCCACCACTCCCATATGTCCAGATTCTCTGATGATGCTGA  
TGCTTTGGGAAGTATGTTAATTTTATGTTACATGAGTGGCTATCATCTGGCTATTATATGGGTTTGA  
CAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAAATTAAGGAGAAATGCTGGCATAGAGCAGCACTA  
AATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAAGCGTTATAGAAGATAACTGGCCTCAT  
TTCTTCAAAATATCAAGTGTGGGAAAGAAAAAGGAAGTGAATGGGTAACCTCTTCTTGATTAAAAGTT  
ATGTAATAACCAATGCAATGTGAATATTTTACTGGACTCTTTGAAAAACCATCTGTAAGAACTGAG  
GTGGGGTGGGAGGCCAGCGGTGGTGGAGCGATTGAGAAAATTTGAATGTGGATTAGATTTTGAATGA  
TATTGGATAATTATTGGTAATTTTATGGCCTGTGAGAAGGGTGTGTAGTTTATAAAAGACTGTCTTAAT  
TTGCATACTTAAGCATTAGGAATGAAGTGTGTAGAGTGCTTAAATGTTTCAAATGGTTTAAACAAATG  
TATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTGGACATGGCTGTTTCAATTGTACTGTTT  
TTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTAATTTTTTTTTTAA

Human SMN2 mRNA sequence - var4 (public gi: 13259526) (SEQ ID NO: 150)

CCACAAATGTGGGAGGGCGATAAACCCTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCTCTCCGGCC  
ACCGTACTGTTCCGCTCCCAGAAGCCCCGGGCGGCGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA  
CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA  
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG  
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT  
CGGGTAAACCAAAAACACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAACTACTGC  
AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC  
CCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA  
GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC  
TCAAGAGAATGAAAATGAAAGCCAAAGTTTCAACAGATGAAAGTGAGAAGTCCAGGTCTCCTGGAAATAAA  
TCAGATAACATCAAGCCCCAAATCTGCTCCATGGAACCTTTTTCTCCCTCCACCACCCCCCATGCCAGGGC  
CAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCATGGCCACCACCGCCACCGCCACCACCACCACC  
CCACTTACTATCATGCTGGCTGCCTCCATTTCTTCTGGACCACCAATAATTCCCCCACCACCTCCCAT  
TGTCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTTATGGTACATGAGTGGCTATC  
ATCTGGCTATTATATGGAATGCTGGCATAGAGCAGCACTAAATGACACCACTAAAGAAACGATCAGAC  
AGATCTGGAATGTGAAGCGTTATAGAAGATAAAGTGGCTCATTTCTTCAAAATATCAAGTGTGGGAAAG  
AAAAAGGAAGTGAATGGGTAACCTCTTCTTGATTAAAAGTTATGTAATAACCAATGCAATGTGAATA  
TTTTACTGGACTCTTTTGA AAAAACCATCTGTAAGAACTGAGGTGGGGTGGGAGGCCAGCACGGTGGTG  
AGGCAGTTGAGAAAATTTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGG  
CCTGTGAGAAGGGTGTGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATTTAGGAATGAAG  
TGTTAGAGTGCTTAAATGTTTCAAATGGTTTAAACAAATGATATGTGAGGCGTATGTGGCAAAATGTTA  
CAGAATCTAACTGGTGGACATGGCTGTTTCAATTGTACTGTTTCTTCTATATGTTTAAAAGTAT  
ATAATAAAAATATTTAATTTTTTTTTTAA

Human SMN2 mRNA sequence - var5 (public gi: 13259525) (SEQ ID NO: 151)

CCACAAATGTGGGAGGGCGATAAACCCTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCTCTCCGGCC  
ACCGTACTGTTCCGCTCCCAGAAGCCCCGGGCGGCGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA  
CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA  
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG  
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT

CGGGTAAACCAAAAACACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAATACTGC  
 AGCTTCCTTACAAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC  
 CCAGCTACCATTTGCTTCAATTGATTTTAAGAGAGAAAACCTGTGTTGTGGTTTACACTGGATATGGAATA  
 GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC  
 TCAAGAGAATGAAAATGAAAGCCAAGTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAA  
 TCAGATAACATCAAGCCCAATCTGCTCCATGGAACCTTTTCTCCCTCCACCACCCCATGCCAGGGC  
 CAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCAATGGCCACCACCGCCACCACCACCACCACC  
 CCACCTTACTATCATGCTGGCTGCCTCCATTTCTTCTGGACCACCAATAATCCCCCACCACCTCCATA  
 TGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTTATGGTACATGAGTGGCTATC  
 ATACTGGCTATTATATGGGTTTTAGACAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAAATTAAGG  
 AGAAATGCTGGCATAGAGCAGCACTAAATGACACCCTAAAGAAACGATCAGACAGATCTGGAATGTGAA  
 GCGTTATAGAAGATAACTGGCCCTCATTTCTTCAAAATATCAAGTGTGGGAAAGAAAAAGGAAGTGGAA  
 TGGGTAACCTCTTCTTGATTAAAAGTTATGTAATAACCAATGCAATGTGAAATATTTTACTGGACTCTTT  
 TGAAAAACCATCTGTAAAAGACTGAGGTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGTTGAGAAAAT  
 TTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGGCCTGTGAGAAGGGTGT  
 TGTAAGTTTATAAAGACTGTCTTAATTTGCATACCTTAGCATTTAGGAATGAAGTGTAGAGTGTCTTAA  
 AATGTTTCAAATGGTTTAAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTG  
 GACATGGCTGTTCAATTGTACTGTTTTTTTCTATCTTCTATATGTTTAAAGTATATAATAAAAAATATTTA  
 ATTTTTTTTTTAA

Human SMN2 Protein sequence - var1 (public gi: 736411) (SEQ ID NO: 276)

AMSSGGSGGGVPEQEDSVLFRRGTGQSDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTPK  
 RKPAAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETGVVYTYGYNREEQNLSDL  
 LSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPMPGPRLGPGKPG  
 LKFNPPPPPPPPPHLLSCWLPFPSPGPPIIPPPPICPDSLDDADALGSMLISWYMSGYHTGYMGRFR  
 QNQKEGRCSHSLN

Human SMN2 Protein sequence - var2 (public gi: 13259531) (SEQ ID NO: 277)

MAMSSGGSGGGVPEQEDSVLFRRGTGQSDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP  
 KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETGVVYTYGYNREEQNLS  
 LSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPMPGPRLGPGKI  
 IPPPPPICPDSLDDADALGSMLISWYMSGYHTGYMEMLA

Human SMN2 Protein sequence - var3 (public gi: 13259529) (SEQ ID NO: 278)

MAMSSGGSGGGVPEQEDSVLFRRGTGQSDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP  
 KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETGVVYTYGYNREEQNLS  
 LSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPMPGPRLGPGKI  
 IPPPPPICPDSLDDADALGSMLISWYMSGYHTGYMGRFNQKEGRCSHSLN

Human SMN2 Protein sequence - var4 (public gi: 13259527) (SEQ ID NO: 279)

MAMSSGGSGGGVPEQEDSVLFRRGTGQSDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP  
 KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETGVVYTYGYNREEQNLS  
 LSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPMPGPRLGPGK  
 GLKFNPPPPPPPPPHLLSCWLPFPSPGPPIIPPPPICPDSLDDADALGSMLISWYMSGYHTGYMEM  
 LA

Human SMN2 Protein sequence - var5 (public gi: 10937869) (SEQ ID NO: 280)

MAMSSGGSGGGVPEQEDSVLFRRGTGQSDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP  
 KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETGVVYTYGYNREEQNLS  
 LSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPMPGPRLGPGK  
 GLKFNPPPPPPPPPHLLSCWLPFPSPGPPIIPPPPICPDSLDDADALGSMLISWYMSGYHTGYMGR  
 RQNKKEGRCSHSLN

Unigene Name: SNX1 Unigene ID: Hs.498154

Human SNX1 mRNA sequence - var1 (public gi: 3152939) (SEQ ID NO: 152)

ATGGCGTGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCGGCTCGAGCCGG  
 AGTCCGAGGGGGCGCGGGGATCAGAACCCGAGGTGGGGACAGCGACACCGAGGGGGAGGACATTTT  
 CACCGCGCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTTCCCATCAACAAT

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GGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTGCAGATGCCACAG  
TGGAGCTATCCTTGGACAGCACACAAAATAATCAGAAGAAGGTGCTAGCCAAAACACTCATTCTCTTTC  
TCCTCAGGAAGCCACAAATCTTTCGAAGCCCCAGCCAACTATGAGGAGCTAGAGGAAGAAGACAGGAG  
GATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGAATGCATATGTAG  
CCTACAAAGTTACAACACAGACAAGCTTACCATTGTTTCAAGCAAAACAGTTTGCAGTAAAAAGAAGATT  
TAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAATGGCTTCATTGTCCCTCCA  
TCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTTCTCTGCAGAAT  
TTCTTGAAAAACGGAGGGCCGCTTTAGAAAAGGTACCTTCAGAGGATTGTAAATCATCCTACCATTGTTACA  
GGACCTTGACGTGAGAGATTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGTACCCAGACATTGAGT  
GGTGTCTGGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTGACGCAAAATGACCATCAAGATGAATG  
AATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTTACGGAAGTGC  
TGCTGTTGTAGAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCAGTTTGCAAAGAGT  
CTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTACGGGCACTCTCCAGCTGGCTGAGGTGG  
AAGAAAAAATGAGCAGCTCCACCAGGAACAGGCCAACAAATGACTTCTTCTCTTGTGAGCTCCTGAG  
TGACTACATTGCGCTCTTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAGACATGGCAGCGCTGG  
CAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGGCTGCTGTGGGCCAACAAAGCCTG  
ATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGAATCAATATGAAAGGGACTT  
CGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAATCCAAGGACTTCAAG  
AACCAGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAAAGTACTGGGAAGCCT  
TCCTTCTGAGGCAAAGGCCATCTCCTAA

Human SNX1 mRNA sequence - var2 (public gi: 3152941) (SEQ ID NO: 153)

ATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCGGCCTGGAGCCGG  
AGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGGGGAGGACATTTT  
CACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTTCCCATCAACAAT  
GGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTCAGGGGATGGTA  
TGAATGCATATGTAGCTTACAAAGTTACAACACAGACAAGCTTACCATTGTTTCAAGCAAAACAGTTTGC  
AGTAAAAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAATGGC  
TTCATTGTCCCTCCATCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATT  
CTTCTTCTGCGAATTTCTTGAAAAACGGAGGGCCGCTTTAGAAAAGGTACCTTCAGAGGATTGTAATCA  
TCCTACCATTGTTACAGGACCCTGACGTGAGAGTTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGT  
ACCCAGACATTGAGTGGTGTCTGCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTGACGCAAAATGA  
CCATCAAGATGAATGAATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCG  
CTTACGGAAACTGCATGCTGTTGTAGAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCC  
CAGTTTGCAAAGAGTCTGACCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTACGGGCACTCTCCC  
AGCTGGCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAAATGACTTCTTCTCCT  
TGCTGAGCTCCTGAGTGACTACATTGCGCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAG  
ACATGGCAGCCTGGCAGGATGCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGGCTGCTGT  
GGGCCAACAAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGACTCA  
ATATGAAAGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAA  
TCCAAGGACTTCAAGAACCAGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAA  
AGTACTGGGAAGCCTTCTTCTGAGGCAAAGGCCATCTCCTAA

Human SNX1 mRNA sequence - var3 (public gi: 30582804) (SEQ ID NO: 154)

ATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCGGCCTGGAGCCGG  
AGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGGGGAGGACATTTT  
CACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTTCCCATCAACAAT  
GGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTCAGATGCCACAG  
TGGAGCTATCCTTGGACAGCACACAAAATAATCAGAAGAAGGTGCTAGCCAAAACACTCATTCTCTTCC  
TCCTCAGGAAGCCACAAATCTTTCGAAGCCCCAGCCAACCTATGAGGAGCTAGAGGAAGAAGAAGAGGAG  
GATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGAATGCATATGTAG  
CCTACAAAGTTACAACACAGACAAGCTTACCATTGTTTCAAGCAAAACAGTTTGCAGTAAAAAGAAGATT  
TAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAATGGCTTCATTGTCCCTCCA  
CCCCCGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTTCTCTGCAGAAT  
TTCTTGAAAAACGGAGGGCCGCTTTAGAAAAGGTACCTTCAGAGGATTGTAAATCATCCTACCATTGTTACA  
GGACCTTGACGTGAGAGATTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGTACCCAGACATTGAGT  
GGTGTCTGCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTGACGCAAAATGACCATCAAGATGAATG  
AATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTTACGGAAGTGC  
TGCTGTTGTAGAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCAGTTTGCAAAGAGT  
CTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTACGGGCACTCTCCAGCTGGCTGAGGTGG  
AAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAAATGACTTCTTCTCCTTGTGAGCTCCTGAG  
TGACTACATTGCGCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAGACATGGCAGCGCTGG

Figure 36 part - 85



CAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGGCTGCTGTGGGCCAACAAAGCCTG  
ATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGAAGTCAATATGAAAGGGACTT  
CGAGAGGATTTCAACAGTGGTCCGAAAAGAGTGATACGGTTTGAGAAAAGAGAAATCCAAGGACTTCAAG  
AACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAAAGTACTGGGAAGCCT  
TCCTTCCTGAGGCAAAGGCCATCTCCTAG

Human SNX1 mRNA sequence - var4 (public gi: 4884359) (SEQ ID NO: 155)

GGTTGCTTTGTAAAGTTCCATCTAATGATCATTCTGACGTAAGTCTGTTTTCTTATTTCTTGGAAATGA  
TGTCTCCTCTGTTTTCAGAACTTCCTCCTCTGCTTCCTGTATCCTGAGGCTGGCGGGCCAGTTGTCTTT  
AGGGCTTGTGCATTTTGTAAAGAGCTTGCACGTGTGGAAATCAAGTAGGCCAGTAGTGGGTTAGGGGTA  
CTGAGCCAGAACCTCTACAAGGAATAACAGGAGCACAAAGGAAGAAGGTGGTATTCCAGCTGGGGACCC  
AGGAGGGAGGACTTTGTGGAGAACCTGATGCTTGAACCTGAGTCTAAAAGGTGTAAAAGTGTGTGTGCTT  
CTGCCTCCTGTCTGTCTGGCAGGGTGTGGTAGGCGCATCTAGGGAAATGTCAAGTGGCTTGGTGTAGGG  
TAAAGTCAGTGAGGCCCATGGAGAAAAACGAGCAGGAGCCACATCACATGGGTGTCTGATAGGACCTGGG  
AGGCGCTTTCCACATTACCATTGTCTGCTTCTGTATCTGGACACACCAGAAGGCGTGAGACTGGAGGCAGG  
AAGAGCAGCCAGGCTTATCCCTACCCTCAGGAGAGCTGAAAAGGGCAGGTATGGTGGGGCCAGAGCTCAG  
GAGAGTTTCGGAACCACTGAGATCGGTCTTGTATTGATGAGAGGCTTGAGGGGAGAGGGAGGTAGCTAG  
GATGCCCCGCAAGCTTCTGGCCAGACACTGGGCAGACAATGAAACCTTTGTAAACACATGAGGCAATAG  
GTTTGGGGCAGATGGGAGGGGAAGCAGTGGTGGGGCAGTGAGTGTGAAGGTGTTTTAAGAAGCGGCTC  
TGGGCCAGGCACAGTGGCTTATGCCTGTATTCTTCACTTTTGGGAGGCGAGGTGGGAGAAATCACTTGA  
GCCCCAAGATTTGAGACCAGCTGGGGAATATAGTGAGACCCTGTCCCTACAAAAATAAAAAACAATAGC  
TGGGTGTGTGGTGGTGCATGCCTGTAGGCCCAAGCTACGCGGGAACATCACCTGAGCCCAGGAGGTGAGG  
TTGCACTGAGCTACAGTTGCGCCACTGCACCTCCAGCCTAGGTGACAGAGCAAGATCTTGTCTCAAAAAA  
AAAACAGCTCTGGATGGGAAGGGAGGCCAGTTGGCTTAAAGTAGGGGAGATAGAGTTAAAGGAGGCTTTGT  
TTTATTTAAAGGTGGGACAACTTAAGCATGTTAATAAAATTCAGAGAAGAGAAAGAGAATGACTATCAG  
AGCCATGTTTGAAGAAAATGGGGTCCAGAGCACAGGAAGGGGACCTGTGTTTCAAGGGTGCCTCACTGC  
TGAGGCCACAGGAAGAATCTGTAGGTGGAGGGGAGGCCGAAGAGGGGAAGTTTTCATGCTTGATAATTA  
AATTTCTGAGATAGGAATGTCAATTTACCTATTTAAGCCAAGTTTTTTTAGATAAAAGGTATGGAACC  
TGCTTTCCCTTGGCTAGTTTCAAGCTTGGGCTCCGAGTGTCTGAAGATGAGGACTGGACTTCGAGCTGG  
TGTGATCCCAGTATTCAGTGTCTGACTCAGTGACAAAATAAATGAGAGAAACGGGAATAAGAATTGTCTG  
CCTACACAAAAATACCAGCAACTGTAACTCTTCCAGAAGATTTTCATTCTGAATGCTCCTGTAGCTAG  
GAACCTTAAAAAGTCTTTGAAGCAACTCAAGTTTTAAAAAAGGGGAGGAACCTCTGGAATCTCAGGATG  
GGGCCAAGATGTGGCTGGAGAGTGTGTGGTGTATGGAGGGCGTGTCTTTTGGCCAGCACACTCAGGGCCCA  
CGGGAAGCCCATAGACTTCAAGGACATCAAGCCCCAAGGTGGTGGGATTTTCCCCACCACTTGGCAG  
CCTAGGGGGAAGGGGAGGGGCGGGAAGATAATGGGGATCCCTGGCTCCAAACATAGGAGGACACATCTG  
TGCTACAGTGCACATGCCTGGATGTACACTCTGTCTTTGGAGACACTGGCTAAGATTCTCTGTCTCAT  
GTTTGGACAGGGTCTGTGCCTGATCTGAGATAAATGGACAAGAACAACCTGAAGCCTGTCTTCTGGTGCATG  
TGTCACTGCGGATAACTGCATCTTGTGATAAAGTTGGGTGATTTACAGTCTCCACCAAATGCTAACTC  
TGGGGTCTTACGCTTTATAACTCCATGGGCCCCAGCAAGGTTTCAAGCTCAAAACAGGTGTCAAATAGA  
TAACTGTTGAATGATTGTTCCCCAGTTGCAGGCTCTGCCACCTGGCGTTTCACTGTCTGTGAAGGACC  
CAGCTCACCTTTCCCTCTTTATCTCCAGTCTTCCCAACAGCGCCGACACCTCATGGAACCTGATTGCA  
AATGTGCTACTTCTCACTTCTGTGTGGCCCCAGGAGGCTGGGTTAATGCTGGGCTTGGTACCTTAAGCAC  
CCTTTCTCCCTTCCCATCTTCACTCTCAGAAATACACCTGTCTGAAGCAGGCATTTTCCATGCCCTAG  
ATGGGAATATAAGTGTAAAGGAGATGTGAAGCATTGCTGTGTGTGTCAGAACATTCAGTGGATCCTCAT  
AGGCACTTCTAGAAACCAATCCTTGAAGATGACTAACCAGAAATGCCCGTCATAGCACTGTTTACAGTT  
GCAAAACCTGAAGCCAATTGAAATGTCCATCAGGAGGGGATTAATGAATTATGGTACAGTTACACCGTT  
GAATATTTTACAGCCATTGAAGATGATATAGCTATATTCAATTGACAAGGAAAACCTCATATTTTTAGT  
GAAAAAGCAGGTTATAGAATTGCATGATTTACATTTATATAAACTTTATATATGGGAAGGATGTTG  
ATTGAATTGTTAATAACTATGGTCACTCTAGAGATGGAAGTTTGCAATTACCTTTAATTTTAATACCAT  
TTTGTATTGCTTAAATTTGTATGTATTTCGTTAAATAAGAAAAATCAAATAAAGCTATTTTCATTAT  
GGGAAAAA

Human SNX1 mRNA sequence - var5 (public gi: 4406620) (SEQ ID NO: 156)

ATAAAAGGTATGGAACCTGCTTTCCCTTGGCTAGTTTCAAGCTTTGGGCTCCGAGTGTCTGAAGATGAGG  
ACTGGACTTCGAGCTGGTGTGATCCAGTATTCAAGTGTCTGACTCAGTGACAAAATAAATGAGAGAAAC  
GGGAATAAGAATTTGTCGCTACACAAAAATACCAGCAACTGTTAACTCTTCCAGAAAGATTTTCACTCTG  
AATGCTCCTGTAGCTAGGAACCTTAAAAAGTCTTTTGAAGCAACTCAAGTTTTAAAAAAGGGGAGGAACTC  
CTGGAAATCTCAGGATGGGGCCAAGATGTGGCTGGAGAGTGTGTGGTGTATGGAGGGCGTGTCTTTTGGCCG  
AGCACACTCAGGGCCACGGGAAGCCCATAGACTTCAAGGACATCAAGCCCCAAGGTGGTGGGATTTTCC  
CCACAGTACTTGGCAGCCTAGGGGGAAGGGGAGGGGCGGGAAGATAATGGGGATCCCTGGCTCCAAAC  
ATAGGAGGACACATCTGTGCTACAGTGCACATGCCTGGATGTACACTCTGTCTTTGGAGACACTGGCT  
AAGATTCTCTGCTCCATGTTTGGACAGGGTCTGCTGATCTGAGATAAATGGACAAGAACAACCTGAAGC

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CTGTCTTCTGGTGCATGTGTACCTGCCGATAACTGCATCTTGTGATAAAGTTGGGTGATTTACAGTCTC  
CACCAAATGCTAAACTCTGGGGTCTTACGCCTTTATAACTCCATGGGCCCCAGCAAAGGTTTCAGGCTCAA  
AACAGGTGTCAAATAGATAAAGTGAATGATTGTTCCCCAGTTGCAGGCTCTGCCACCTGGCGTTTCATA  
CTGTCTGTGAAAGGAGCCAGCTCACCTTTCCCTCTTTATCTCCAGTCTTCCCAACAGCGCCGACACCT  
CATGGAAACTGATTGCAAATGTGCTACTTCTCACTTCTGTGTGGCCCCAGGAGGCTGGGTTAATGCTGGG  
CTTGGTACCTTAAAGCACCCTTTCTCCCTCCCCATCTTATTCTCAGAATTACACCTGTCTGAAGCAGGC  
ATTTTCCAATGCCCTAGATGGGAATATAAGTGTAAAGGAGATGTGAAGCATTTCCTGTGTGTGAGAACAT  
TCACTGAGGATCCTCATAGGCACCTCTAGAAAACCAATCCTTGAAGATGACTAACAGAAATGCCCTCA  
TAGCACTGTTTACAGTTGCAAAAAGTGAAGCCAATTGAAATGTCCATCAGGAGGGGATTAAATGAATTAT  
GGTACAGTTACACCGTTGAATATTTACAGCCATTGAAGATGATATATAGCTATATTTCATTGACAAGGAA  
AACTCATATTTTTAGTGAAAAAGCAGGTTATAGAATTGCATGATATTCACATTTATATAAACTTTAT  
ATATGGGAAGGATGTTGATTGAATTGTTAATAACTATGGTCACCTCTAGAGATGGAAGTTTGCATTACCT  
TTAATTTTTAATACCATTTTGTATTGCTTAAATTTGTATGTATTATCGTTAAATAAGAAAAATCAAAT  
AAAGCTATTTTCATTATGGGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAA

Human SNX1 mRNA sequence - var6 (public gi: 34535422) (SEQ ID NO: 157)

TTTCCGCCCGGGTGGAAGAAGATGGCGTCGGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCG  
CCCTTCCCCCGCTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGGATCAGAACCAGGCTGGGGACAGCG  
ACACCGAGGGGAGGACATTTTACCGGCGCGCGGTGGTCACTAAACATCAGTCTCCAAAGATAACTAC  
ATCCCTTCTTCCCATCAACAATGGCTCCAAAGAAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAG  
GATCTCTTTGCAGATGCCACAGTGGAGCTATCCTTGGACAGCACACAAAATAATCAGAAGAAGGTGCTAG  
CCAAACACTCATTTCTCTTCTCCTCAGGAAGCCACAAATTCTTGAAGCCCCAGCCAACCTATGAGGA  
GCTAGAGGAAGAAGAACAGGAGGATCAATTTGATTGACAGTGGGTATAACTGATCCTGAGAAGATAGGG  
GATGGTATGAATGCATATGTAGCTTACAAAGTTACAACACAGACAAGCTTACCATTTGTTTCAAGCAAAAC  
AGTTTGCAGTAAAAAGAAAGATTAGTGACTTCTGGGTCTTTATGAGAAGCTTCCGAGAAGCACTCTCA  
GAATGGCTTCATTGTCCCTCCACCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAG  
GAAGATTCTTCTCTGCAGAATTCTTGA AAAACGGAGGGCCGCTTTAGAAAAGTACCTTCAGAGGATTG  
TAAATCATCTTACCATGTTACAGGACCCTGACGTGAGAGAGTTCTTGGAAAAAGAGAGCTGCCACGTGC  
CGTGGGTACCCAGACATTGAGTGGTGTGCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTGAGG  
AAAATGACCATCAAGATGAATGAATCAGACATTGGTGTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGG  
AGCAGCGCTTACGGAAACTGCATGCTGTTGTAGAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAA  
CACAGCCCAGTTTCAAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTACGGGCA  
CTCTCCAGCTGGCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAAATGACTTCT  
TCCTCCTTGTGAGCTCCTGAGTGACTACATTCGCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCG  
CATGAAGACATGCGCAGCTGGCAGGATGCCCAAGCCACTGCAGAGAAGCGGGAGGCCGAGGCTCGG  
CTGCTGTGGGCCAACAAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGG  
TGACTCAATATGAAAGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAGTGATACGGTTTGAGAA  
AGAGAAATCCAAGGACTTCAAGAACACGATGATCAAGTACCTTGAGACACTCCTTTGCTCACAGCAGCAG  
GCTGGGGAGCAGTTGGGAATCAGGTCTGGAATACTCCTAACCAAGAAGTTGCCCAGGTATAGTAAGTTTT  
TCTCTACGTTTCAAGTTTGTGCTGCTGCTTCCCTCTGGAATGGGGTTTCTTTCTCTCCGCTACCT  
CAGCTACCTGTTCTGAGGGTCTCAATCTGTTTTCGTATTCCCACTTCTTTAGGGAAGGAGTTTAAAAACA  
TCTCTTAAATAAGAGGAGCAAAATCTATTA AAACCTATTCTCTGCAAAGGAGGCAGAGACTTTCTCTC  
TCTCTTTTTTTTTTTTTTTTTTGGTGTCCCTATCATTAAGCAAGAGCCTTTCTCTTTTATTCTCTGCTT  
CCCTAAGCTGCTCAGGGCTCTCTGAGTCTTGCCCTCTGATGGCAAGTCTTATATATAACTAAACCTATTT  
TTGTCAACCATCAAACACATCCTCAGTAGACTGTGTGAAGGTGTGAAGTCTGATAATGACTTGATGCT  
TTATCTCCATAGACATGAAAGCCATGCCCTCTGCCCTAGATAGGGTGATCCAAGAGCTCCTGAACCTTA  
GGAGGTTCAAAGAAGCTCTACTGTCTGTGCCAGGAGGTAGCCTGCCAGCAAGAGCCCTCAGGAGTTGCA  
CACACAGCCAAAGGGTGTTCACACAGATCTCTGCCGTCTAGCCAGGGGAGGCCAGAGTCTCGTCAGTCA  
AGGATGGGCTTCCCCCTTAGCTGTGTCCACAGCTGCTCAAGCTATACTGGTCAGAGTGGGCTTTGAAGCT  
CCTTTGTGAGCTCGAGCTGCTGACTGCCACTATGGGAGCCTTGCCACCTCCAGCCCCCTCCATCCCAAAGA  
CGCTCCTGCCACTGGGGCCCCAGGTCTGTGTATCAGTTCTCTTTGGTGGGGGGCTAAGGTTTGGGGCG  
AGGCAACCTGAGACAAGAAAACGCAGTAAACATTCTGATTCCCTGTACACAGATGCAGCACCAGGGGAAG  
GGCCAGTGGTGAAGTATTTCTTTTAAACAGGTGAAGTTTTTGGAAAAAGTCACTCTCCCTACCCCTCAG  
TATCCTTACCATCAACTTTGGTTTTATCCTTCCAGTCTTTATTATATGCTTGCTTTTACATAGTTGTAAT  
AATATACATATAAAGTATTTGTATCCTGCTTTTATCATTCAACATTGTACATGTTATAAGCATTTTACT  
ATATTGTTATATATCTTCAAAAAGTTGATCTGTAAAGCTGTGTAATTGGAAGCATCCATAGGGTGACTG  
TACCATAATTTTGATTATCCCTTGTGTTGGATTCTTGGTCAGGGGTTGTTTGTGTTTATTGTTA  
ACTTTAAATTTTGAATACAATTTAGATTACAGAAAAGTTGCAGGAATATCACAAGAACTCCTATAT  
ATCTTTTATCCAGATTTACTGAGTGTTCATTTTATCCATTGTCCTTATCTATATTTCAATGTTGCATT  
TTCTTAATCATTTGAGAATAATTTGCACAGATACCCCATATGCCCCAAAACAGTATGCATTTCCTAAGA  
ACAGGACATCTCTTCTAAGAGAAGAAGAGAATCTTAAAGCATTATTCAGTATTTTTTAAAGTATTAT  
TATCAAAATCAGGAAGTTTAAACAGTGATTTAATACTGTTATCTAACCCTAGTATTCATATTTAAATTTGC  
CATTTATCCCAATAATGTCTTTGTAGCCATTCTTTACCTTGTGCAGGATCATGTTACATTTGTAAACG

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TGTGTCTCTCAATACTGCAGATTCCTCAACTTTCTTTGTCTTTCATTACCATGACATTTTTGAAGAATA  
CAGGCTATTTTGTCTG

Human SNX1 mRNA sequence - var7 (public gi: 38197125) (SEQ ID NO: 158)  
GTGGAAGAAGATGGCGTCGGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCGGC  
CTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGGGG  
AGGACATTTTACCGGCGCCCGGTGGTCACTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTTCC  
CATCAACAATGGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTGCA  
GATGCCACAGTGGAGCTATCCTTGGACAGCACAAAAATAATCAGAAGAAGGTGCTAGCCAAAACACTCA  
TTTCTCTTCTCTCCTCAGGAAGCCACAAATTTCTTGAAGCCCCAGCCAACCTATGAGGAGCTAGAGGAAGA  
AGAACAGGAGGATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGAAT  
GCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTTCAAGCAAACAGTTTGCAGTAA  
AAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAAATGGCTTCAT  
TGTCCCTCCACCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTTCT  
TCTGCAGAATTTCTTGA AAAACCGAGGGCCGCTTTAGAAAGGTACCTTCAGAGGATTGTAAATCATCCTA  
CCATGTTTACAGGACCTGACGTACAGTCAAGAGTTCTTGA AAAAGAAGAGCTGCCACGTGCCGTGGGTACCCA  
GACATTGAGTGGTGTCTGCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTGAGCAAAATGACCATC  
AAGATGAATGAATCAGACATTTGGTTTGAAGGAGAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTTAC  
GGAACTGCATGCTGTTGTAGAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCAGTT  
TGCAAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTACGGGCACTCTCCAGCTG  
GCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACATGACTTCTTCTCCTTGCTG  
AGCTCCTGAGTGAATACATTGCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAGACATG  
GCAGCGCTGGCAGGATGCCAAGCCACACTGCAGAGAAGCGGGAGGCCGAGGCTCGGCTGCTGTGGGCC  
AACAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGAATCAATATG  
AAAGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAATCCAA  
GGACTTCAGAACCACGTGATCAAGTACCTTGAGCACTCCTTTACTCACAGCAGCAGCTGGCAAAGTAC  
TGGGAAGCCTTCTTCTGAGGCAAAGGCCATCTCCTAATGGACCAAGGACCCAGAGCCACCTGTGTG  
ACGCTGCCTTTTATACACTGTCTCCTCCACCTTGATGGACCCCTAGTGATGCATCCTGCCTAGGCTGG  
ACTTAACCCCTTCTCCTGTCCCCACGACCAACTGTCCCCAGTTACTCTAACCGTTATTTTCATTTAGCT  
TCCATATATATTTTCTTACCTAAGAGAATAGTTTCTGCTTTAAGCAAAAGACCTACAATAGGTGGTGA  
ATTATGGGATGGGGTGGAGTATTGATATAAATATATAAATACAAATGTATATTTTTCAGGATGTGGTTTA  
GGAAGTGGGAATAACGTTTTCTGTTACTCCTGATGGTGCCATGAAAAGGTATGTAATAAAATATTTTAA  
AATCAAAAAA

Human SNX1 mRNA sequence - var8 (public gi: 23111033) (SEQ ID NO: 159)  
GGGTGGAAGAAGATGGCGTCGGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCG  
GCCTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGG  
GGAGGACATTTTACCGGCGCCCGGTGGTCACTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTT  
CCCATCAACAATGGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTG  
CAGATGCCACAGTGGAGCTATCCTTGGACAGCACAAAAATAATCAGAAGAAGGTGCTAGCCAAAACACT  
CATTTCTCTTCTCCTCAGGAAGCCACAAATTTCTTGAAGCCCCAGCCAACCTATGAGGAGCTAGAGGAA  
GAAGAACAGGAGGATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGA  
ATGCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTTCAAGCAAACAGTTTGCAGT  
AAAAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAAATGGCTTC  
ATTGTCCCTCCGCCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTT  
CTTCTGCAGAATTTCTTGA AAAACCGAGGGCCGCTTTAGAAAGGTACCTTCAGAGGATTGTAAATCATCC  
TACCATGTTACAGGACCTGACGTCAAGAGTCTTGGAAAAGAAGAGCTGCCACGTGCCGTGGGTACCC  
CAGACATTGAGTGGTGTCTGCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTGAGCAAAATGACCA  
TCAAGATGAATGAATCAGACATTTGGTTTGAAGGAGAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTT  
ACGGAAGCTGCATGCTGTTGTAGAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCAG  
TTTGCAAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTACGGGCACTCTCCAGC  
TGGCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACATGACTTCTTCTCCTTGC  
TGAGCTCCTGAGTGACTACATTGCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAGACA  
TGGCAGCGCTGGCAGGATGCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGGCTGCTGTGGG  
CCAACAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGAATCAATA  
TGAAAGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAATCC  
AAGGACTTCAAGAACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAAAGT  
ACTGGGAAGCCTTCTTCTGAGGCAAAGGCCATCTCCTAATGGACCAAGGACCCAGAGCCACCTGTG  
TGACGCTGCCTTTTATACACTGTCTCCTCCACCTTGATGGACCCCTAGTGATGCATCCTGCCTAGGCT  
GGACTTAACCCCTTCTCCTGTCCCCACGACCAACTGTCCCCAGTTACTCTAACCGTTATTTTCATTTAG  
CTTCCATATATATTTTCTTACCTAAGAGAATAGTTTCTGCTTTAAGCAAAAGACCTACAATAGGTGGTG  
GAATTATGGGATGGGGTGGAGTATTGATATAAATATATAAATACAAATGTATATTTTTCAGGATGTGGTT

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TAGGAACTGGGAATAACGTTTTCTGTTACTCCTGATGGTGCCATGAAAAGGTTATGTAATAAAATATTTTT  
AAAAATCAAAAAAAAAAAAAAAAAAAAA

Human SNX1 mRNA sequence - var9 (public gi: 23111035) (SEQ ID NO: 160)

GGGTGGAAGAAGATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCG  
GCCTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGG  
GGAGGACATTTTACCCGGCGCCGGTGGTTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTT  
CCCATCAACAATGGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTG  
CAGATGCCACAGTGGAGCTATCCTTGGACAGCACAAAAATAATCAGAAGAAGGTGCTAGCCAAAACACT  
CATTTCTCTTCTCCTCAGGAAGCCACAATTTCTTGAAGCCCCAGCCAACCTATGAGGAGCTAGAGGAA  
GAAGAACAGGAGGATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGA  
ATGCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTTCAAGAAGCAACAGTTTGCAGT  
AAAAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTCCGAGAAGCACTCTCAGAATGGCTTC  
ATTGTCCCTCCGCCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTT  
CTTCTGCAGAAATTTCTGAAAACCGAGGGCCGCTTTAGAAAAGGTACCTTCAGAGGATTGTAAATCATCC  
TACCATGTTACAGGACCCTGACGTACAGAGAGTTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGTACC  
CAGACATTGAGTGGTGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTGACGAAAATGACCA  
TCAAGATGAATGAATCAGACATTTGGTTTGGAGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTT  
ACGGAAACTGCATGCTGTTGTAGAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCCCAG  
TTTGCAAGAGCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTACGGGCACTCTCCAGC  
TGGCTGAGGTGGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAAATGACTTCTTCTCCTTGC  
TGAGCTCCTGAGTGACTACATTGCCTCCTGGCCATAGTCCGCTGGGAGTCTCGGGTGACTCAATATGAA  
AGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAATCCAAG  
ACTTCAAGAACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAAAGTACTG  
GGAAGCCTTCTCCTGAGGCAAAGGCCATCTCCTAATGGACCAAGGACCCAGAGCCACCTGTGTGAC  
GCTGCCTTTTTATACACTGTCTCCTCCACCTTGATGGAGCCCTAGTGATGCATCCTGCCTAGGCTGGAC  
TTAACCCTTCTCCTGTCCCCACGACCAACTGTCCCCAGTTACTCTAACCGTTATTTTATTAGCTTC  
CATATATATTTTCTACCTAAGAGAATAGTTTCTGCTTTAAGCAAAAGACCTACAATAGGTGGTGAAT  
TATGGGATGGGTGGAGTATTGATATAAATATATAAATACAAATGTATATTTTTTCAGGATGTGGTTTAGG  
AATGGGAATAACGTTTCTGTTACTCCTGATGGTGCCATGAAAAGGTTATGTAATAAAATATTTTAAAA  
TCAAAAAAAAAAAAAAAAAAAAA

Human SNX1 mRNA sequence - var10 (public gi: 23111031) (SEQ ID NO: 161)

GGGTGGAAGAAGATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCG  
GCCTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGG  
GGAGGACATTTTACCCGGCGCCGGTGGTTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTT  
CCCATCAACAATGGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTG  
CAGGGGATGGTATGAATGCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTTCAAG  
CAAACAGTTTGCAGTAAAAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCAC  
TCTCAGAATGGCTTCATTGTCCCTCCGCCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTG  
GGAAGGAAGATTCTTCTTCTGCAGAAATTTCTGAAAACCGAGGGCCGCTTTAGAAAAGGTACCTTCAGAG  
GATTGTAAATCATCCTACCATGTTACAGGACCTGACGTACAGAGATTCTTGGAAAAAGAAGAGCTGCCA  
CGTGCCGTGGGTACCCAGACATTGAGTGGTGTCTGCTCCTCAAGATGTTCAACAAAGCCACAGATGCCG  
TCAGCAAAATGACCATCAAGATGAATGAATCAGACATTTGGTTTGGAGAGAAGCTCCAGGAGGTAGAGTG  
TGAGGAGCAGCGCTTACGGAACTGCATGCTGTTGTAGAACTCTAGTCAACCATAGGAAAGAGCTAGCG  
CTGAACACAGCCAGTTTGCAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTAC  
GGGCACTCTCCAGCTGGCTGAGGTGGAAGAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAAATGA  
CTTCTTCTCCTTGTGAGCTCCTGAGTGACTACATTGCTCCTGCGCTCCTGGCCATAGTCCGCGCTGCCTTCGAC  
CAGCGCATGAAGACATGGCAGCGCTGGCAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGG  
CTCGGCTGTGTGGGCCAACAAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTC  
TCGGGTGACTCAATATGAAAGGGAATTCAGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTT  
GAGAAAGAGAAATCCAAGGACTTCAAGAACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGC  
AGCAGCTGGCAAAGTACTGGGAAGCCTTCTTCTGAGGCAAAGGCCATCTCCTAATGGACCAAGGACCC  
CAGAGCCACCTGTGTGACGCTGCCTTTTTATACACTGTCTCCTCCACCTTGATGGACCCCTAGTGATG  
CATCCTGCCTAGGCTGGACTTAACCCCTTCTCCTGTCCCCACGACCAACTGTCCCCAGTTACTCTAAC  
CGTTATTTTATTAGCTTCCATATATATTTTCTTACCTAAGAGAATAGTTTCTGCTTTAAGCAAAAGAC  
CTACAATAGGTGGTGAATATGGGATGGGGTGGAGTATTGATATAAATATATAAATACAAATGTATATT  
TTTCAGGATGTGGTTTAGGAACTGGGAATAACGTTTCTGTTACTCCTGATGGTGCCATGAAAAGGTTAT  
GTAATAAAATATTTTAAATCAAAAAAAAAAAAAAAAAAAAA

Human SNX1 protein sequence - var1 (public gi: 23111032) (SEQ ID NO: 281)

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10/547845

MASGGGGCSASERLPPPPFGLPESEGAAGGSEPEAGDSDEGEDIFTGAADVSKHQSPKITTSLPPINN  
GSKENGIHEEQDQEPQDLFADGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNG  
FIVPPPEKSLIGMTKVKGKEDSSSAEFLEKRRALERYLQRIVNHPMTLQDPDVREFLEKEELPRAVG  
TQTLGAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQVEVECEEQRLRKLHAVVETLVNHRKELALNTA  
QFAKSLAMLGSSSEDNTALSRALSQLAEEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMK  
TWQRWQDAQATLQKKREAEARLLWANKPKDLQQAQDEILEWESRVTYERDFERISTVVRKEVIRFEKEK  
SKDFKNHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Human SNX1 protein sequence - var2 (public gi: 23111036) (SEQ ID NO: 282)

MASGGGGCSASERLPPPPFGLPESEGAAGGSEPEAGDSDEGEDIFTGAADVSKHQSPKITTSLPPINN  
GSKENGIHEEQDQEPQDLFADATVELSLDSTQNNQKKVLAKTLISLPPQATNSSKPQPTYEEEEEEQ  
DQFDLTVGITDPEKIGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNGFIVPP  
PPEKSLIGMTKVKGKEDSSSAEFLEKRRALERYLQRIVNHPMTLQDPDVREFLEKEELPRAVGTTLS  
GAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQVEVECEEQRLRKLHAVVETLVNHRKELALNTAQFAS  
LAMLGSSSEDNTALSRALSQLAEEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRWSRVTYERDFE  
RISTVVRKEVIRFEKEKSKDFKNHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Human SNX1 protein sequence - var3 (public gi: 12653179) (SEQ ID NO: 283)

MASGGGGCSASERLPPPPFGLPESEGAAGGSEPEAGDSDEGEDIFTGAADVSKHQSPKITTSLPPINN  
GSKENGIHEEQDQEPQDLFADATVELSLDSTQNNQKKVLAKTLISLPPQATNSSKPQPTYEEEEEEQ  
DQFDLTVGITDPEKIGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNGFIVPP  
PPEKSLIGMTKVKGKEDSSSAEFLEKRRALERYLQRIVNHPMTLQDPDVREFLEKEELPRAVGTTLS  
GAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQVEVECEEQRLRKLHAVVETLVNHRKELALNTAQFAS  
LAMLGSSSEDNTALSRALSQLAEEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMKTQWR  
QDAQATLQKKREAEARLLWANKPKDLQQAQDEILEWESRVTYERDFERISTVVRKEVIRFEKEKSKDFK  
NHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Human SNX1 protein sequence - var4 (public gi: 34535423) (SEQ ID NO: 284)

MASGGGGCSASERLPPPPFGLPESEGAAGGSEPEAGDSDEGEDIFTGAADVSKHQSPKITTSLPPINN  
GSKENGIHEEQDQEPQDLFADATVELSLDSTQNNQKKVLAKTLISLPPQATNSSKPQPTYEEEEEEQ  
DQFDLTVGITDPEKIGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNGFIVPP  
PPEKSLIGMTKVKGKEDSSSAEFLEKRRALERYLQRIVNHPMTLQDPDVREFLEKEELPRAVGTTLS  
GAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQVEVECEEQRLRKLHAVVETLVNHRKELALNTAQFAS  
LAMLGSSSEDNTALSRALSQLAEEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMKTQWR  
QDAQATLQKKREAEARLLWANKPKDLQQAQDEILEWESRVTYERDFERISTVVRKEVIRFEKEKSKDFK  
NHVIKYLETLLCSQQQAGEQLGIRSGILLTKKLPRYSKFFSTVHKFCAAASLWKWGFFLSAYLSYLF

Human SNX1 protein sequence - var5 (public gi: 3152942) (SEQ ID NO: 285)

MASGGGGCSASERLPPPPFGLPESEGAAGGSEPEAGDSDEGEDIFTGAADVSKHQSPKITTSLPPINN  
GSKENGIHEEQDQEPQDLFADGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNG  
FIVPPSPEKSLIGMTKVKGKEDSSSAEFLEKRRALERYLQRIVNHPMTLQDPDVREFLEKEELPRAVG  
TQTLGAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQVEVECEEQRLRKLHAVVETLVNHRKELALNTA  
QFAKSLAMLGSSSEDNTALSRALSQLAEEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMK  
TWQRWQDAQATLQKKREAEARLLWANKPKDLQQAQDEILEWESRVTYERDFERISTVVRKEVIRFEKEK  
SKDFKNHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Human SNX1 protein sequence - var6 (public gi: 3152940) (SEQ ID NO: 286)

MASGGGGCSASERLPPPPFGLPESEGAAGGSEPEAGDSDEGEDIFTGAADVSKHQSPKITTSLPPINN  
GSKENGIHEEQDQEPQDLFADATVELSLDSTQNNQKKVLAKTLISLPPQATNSSKPQPTYEEEEEEQ  
DQFDLTVGITDPEKIGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNGFIVPP  
SPEKSLIGMTKVKGKEDSSSAEFLEKRRALERYLQRIVNHPMTLQDPDVREFLEKEELPRAVGTTLS  
GAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQVEVECEEQRLRKLHAVVETLVNHRKELALNTAQFAS  
LAMLGSSSEDNTALSRALSQLAEEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMKTQWR  
QDAQATLQKKREAEARLLWANKPKDLQQAQDEILEWESRVTYERDFERISTVVRKEVIRFEKEKSKDFK  
NHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Unigene Name: SNX3 Unigene ID: Hs.12102

Human SNX3 mRNA sequence - var1 (public gi: 23111040) (SEQ ID NO: 162)

CTGTTTGCACCCCGAGTCCCATGACACCGCTTCTCCTCACACCCAGTCCGCAGTGCCCTCCCCAGCC  
TCGGCCGGGCTCCCCGGGAGCCGGGCGTGGCGTTCCAGCTAGTGAGCCGTTTCTCCCTGGGCTCGGAGG  
CGGAAGCTTGAGGGGCGGGGAGGAGCTTCGCGTGCGGGGTGAACGCCCGCTCTACGTGCTCGTTCTCT  
TCGCGACCGCTGCGCGCGAGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGGCGGGCGGCTGAACGCG  
GAGGGGGCGGAGGGAGCCCGGGCGGGCGGCGAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCC  
GGCGGCTGATCACCAAGCCGAGAACCTGAATGACGCCTACGGACCCCCAGCAACTTCTCGAGATCGA  
TGTGAGCAACCCGCAACCGGTGGGGGTTCGCGCCGGGGCCGCTTACCACCTACGAAATCAGGGTCAAGGTC  
GTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTCCTTTAGAGGAGATGATGGAATATTTG  
ATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTCGCTGGTCATCCTCT  
GGCACAGAACGAACGTTGTCTTACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATCT  
AAAATAAGACATGCCGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAATGATTGATAAGCACCAG  
TGAAGAAGTTCTAAGTTTAGCATGCTGCACAGAACTGGTATAACATGCCTTCAGTATACTAACACTCA  
TATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATTCC  
AGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTTAATGTGGTGACACTATAGCCTCACAAACCTGT  
ATTCCAGTGTAATCTGCAGTGTCGTAAGTTACTGGCTTGGTCTTATTGTCACAGTTTTTGCGTCT  
TGTTTGCTTCTGCTATCTGATTAACTAGAAATATTTCTTTTCCCCCTTTAATTTGTGATGTCACTTGAC  
CCCATTTATGTGTAGGAGCACTACACCATTTGGTTTTCCAATCTGCACACATAAGATACATACTTGTGTGC  
AGAAAGTATCTTCTCCAGGCTTGTAAATACCTTCACATGGAAGATTAATGAGGGAAATCTTTATATTCT  
GTATAAAAACAAAAGCAAATTTATATACTAAAATCATTGTCTAAAAATTTAAGTTGTTTTCAAATAAAA  
ATTAATATGCATTCTGATATGCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var2 (public gi: 34304375) (SEQ ID NO: 163)

GTCCGGCCGGAACCTGTTTGCACCCCGAGTCCCATGACACCGCTTCTCCTCACACCCAGTCCGCAGTG  
CCCCCCCCAGCTCGGCGGGGCTCCCCGGGAGCCGGGCGTGGCGTTCCAGCTAGTGAGCCGTTTCTCCC  
CTGGGCTCGGAGCGGAAGCTTGAGGGGCGCGGGAGGAGCTTCGCGTGCGGGGTGAACGCCCGCTCTAC  
GTGCTCGTTCTCTTCGCGACCGCTGCGCGCGAGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGCGCG  
GCGGCTGAACGCGGAGGGGGCGGAGGGAGCCCGGGCGGGCGGCGAGCAGCTACAGCGAAATGGCGGAGACC  
GTGGCTGACACCCGGCGGCTGATCACCAAGCCGAGAACCTGAATGACGCCTACGGACCCCCAGCAACT  
TCCTCGAGATCGATGTGAGCAACCCGCAACCGGTGGGGGTTCGCGCCGGGGCCGCTTACCACCTACGAAAT  
CAGGCTCAAGACAAATCTTCTATTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTT  
GAATGGCTGCGAAGTGAATTAGAAGAGAGAGCAAGCCCTGCCTCAGAATGACATCAGAGGCAAGGAGTC  
ATGGAAGGACGTGGTGTGCTCAGAATGATGAAAAGTTATTTGTGACTAGAAAAGTCGTAGTTCCCCCGCT  
CCCTGGGAAAGCGTTTTTGCGTCAGCTTCTTTTAGAGGAGATGATGGAATATTTGATGACAATTTTATT  
GAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTGCGTGGTCATCCTCTGGCACAGAACGAAC  
GTTGTCTTACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATCTAAAATAAGACATGC  
CTGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAAATGATTGATAAGCAACAGTGAAGAAGTTCTAA  
CTTTTAGCATGCTGCACAGAACTGGTATAACATGCCTTCAGTATACTAACACTCATATGCTCAGTTTTG  
TTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATTCCAGCCTTTCTATATA  
AATAGCTCTTCTTGCTGTTTTAATGTGGTGACACTATAGCCTCACAAACCTGTTATTCCAGTGTAATC  
TGAGTGTGCTAAGTTACTGGCTTGGTCTTATTGTCACAGTTTTTGCGTCTTGTGCTTCTGCTTCTGCT  
ATCTGATTACAGTAATTTCTTTCCCCCTTTTAAATTTGTGATGTCACTTGACCCCATTTATGCTGTA  
GGAGCACTACACCATTTGGTTTCCAATACTGCACACATAAGATACTACTTGTGTGCAGAAAGTATCTTCC  
TCCAGGCTTGTAAATACCTTCACATGGAAGATTAATGAGGGAAATCTTTATATTCTGTATAAAAAACAAA  
GCAAATTTATATACTAAAATCATTGTCTAAAAATTTAAGTTGTTTTCAAATAAAAATTAATATGCATT  
CTGATATGCAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var3 (public gi: 34190889) (SEQ ID NO: 164)

TCGACCCACGCGTCCGCCACGCGTCCGCTGTTTGCACCCCGAGTCCCATGACACCGCTTCTCCTCAC  
CCCCAGTCCGCAGTGCCCTCCCCAGCCTCGGCGGGGCTCCCCGGGAGCCGGGCGTGGCGTTCCAGCTAG  
TGAGCCGTTTCTCCCCTGGGCTCGGAGGCGGAAGCTTGAGGGGCGCGGGAGGAGCTTCGCGTGCGGGGT  
GAACGCCCGCTCTACGTGCTCGTTCTTTCGCGACCGCTGCGCGCGAGCCCCGTGTCCCCACGGCGGGCA  
GCAGCGGCGGCGGCGGCGGCTGAACGCGGAGGGGCGGAGGGAGCCCGGGCGGCGGCGAGCAGCTACAGC  
GAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAAGCCGAGAACCTGAATGACGCTACG  
GACCCCCAGCAACTTCTCGAGATCGATGTGAGCAACCCGCAACCGGTGGGGGTTCGCGCGGGGCGGCTT  
CACCCTTACGAAATCAGGGTCAAGACAAATCTTCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGA  
AGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGCCCTGCCTCAGAATGACAT  
CAGAGGCAAGGATCATGGAAGGACGTGGTGTGCTCAGAATGATGAAAAGTTATTTGTGACTAGAAAGT  
CGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTCTTTAGAGGAGATGATGGAATATTT  
GATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTGCGTGGTCATCCTC  
TGGCACAGAACGAACGTTGTCTTACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATC  
TAAATAAGACATGCCGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAATGATTGATAAGCACCA  
GTGAAGAAGTTCTAAGTTTAGCATGCTGCACAGAACTGGTATAACATGCCTTCAGTATACTAACACTC

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ATATGCTCAGTTTTGTGTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATTC  
 CAGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTAAATGTGGTGACACTATAGCCTCACAACCTGT  
 TATTCCAGTGTAATCTGCAGTGTGTAACCTAAAGTTACTGGCTTGGTCTTATTTGCACAGTTTGTGCGTC  
 TTGTTTGTCTTCTGCATCTGATTAACCTAGAATATTTCTCTTTCCCTTTTAAATTTGTGATGTCACCTTGA  
 CCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGATACATACTTGTGTG  
 CAGAAAGTATCTTCCTCCAGGCTTGTAAATACCTTCACATGGAAGATTAATGAGGGAAATCTTTATATTC  
 TGTATAAAACAAAAGCAAATTTATATACTAAAATCATTGTCTAAAAATTTAAGTTGTTTCAAATAAA  
 AATTAAATGCATTTCTGATATGCAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var4 (public gi: 15779011) (SEQ ID NO: 165)

GGGGCTTCGCGACCGCTGCGCGCGAGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGGCGGGCGGCTG  
 AACGCGGAGGGGGCGGAGGGAGCCCCGCGGCGGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTG  
 ACACCCGGCGGCTGATCACCAGCCGAGAACCTGAATGACGCCCTACGGACCCCCCAGCAACTTCCTCGA  
 GATCGATGTGAGCAACCCGCAAACGGTGGGGTGGCGCGGGCCGCTTCACTACTTACGAAATCAGGGTC  
 AAGACAAATCTTCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGC  
 TCGGAAGTGAATTAGAAAGAGAGAGCAAGGTCGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCCTCA  
 GCTTCTTTTAGAGGAGATGATGGAATATTTGATGACAATTTTATGAGGAAAGAAAACAAGGGCTGGAG  
 CAGTTTATAACAAGGTCGCTGGTCACTCTGGCACAGAACGACGTTGTCTTACATGTTTTTACAAG  
 ATGAAATAATAGATAAAAGCTATACTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAA  
 AAACGTGACTATTAATGATTGATAAGCACCAGTGGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAACT  
 GGTATAACATGCCTTCAGTATACTAACACTCATATGCTCAGTTTGTGTTTGGCAGTTGACAAGAA  
 GTTAATTTGCTTTAGTAAAAATCCCTCATTCAGCCTTTCTATATAAATAGCTCTTTCTGCTGTTTTAA  
 TGTGGTGACACTATAGCCTCACAACCTGTTATTCCAGTGTAACTGTCAGTGTGTAAGTAAAGTTACT  
 GGCTTGGTCTTATTTGCACAGTTTTTGGCTCTGTTTGGCTTCTGTCATCTGATTAACCTAGAATATTTCTC  
 TTTCCCTTTTAAATTTGTGATGTCACCTGACCCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCA  
 ATACTGCACACATAAGATACATACTTGTGTGCAGAAAGTATCTTCTCCAGGCTTGTAAATACCTTCACA  
 TGAAGATTAATGAGGGAAATCTTTATATTCTGTATAAAACAAAAGCAAATTTATATACTAAAATCATT  
 TGTCTAAAAATTTAAGTTGTTTTCAAATAAAAAATTAATGCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA  
 AA

Human SNX3 mRNA sequence - var5 (public gi: 15929496) (SEQ ID NO: 166)

CGCGCGAGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGGCGGCGGCTGAACGCGGAGGGGGCGGAG  
 GGAGCCCGCGGCGGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCA  
 CCAAGCCGAGAACCTGAATGACGCCCTACGGACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCC  
 GCAAACGGTGGGGTGGCGCGGGGCGGCTTCACTACTTACGAAATCAGGGTCAAGACAAATCTTCTCTATT  
 TTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAA  
 GAGAGAGCAAGGTCGTATTTCCCCCGCTCCCTGGGAAAGCGTTTTTGGCTGAGCTTCTTTTAGGAGGA  
 TGATGGAATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAACAAGGTC  
 GCTGGTCATCCTCTGGCACAGAACGACGTTGTCTTACATGTTTTTACAAGATGAAATAATAGATAAAA  
 GCTATACTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGGCAAAACGCTGACTATTAATGA  
 TTGATAAGCACCAGTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAACTGGTATAACATGCCTTCAG  
 TATACTAACACTCATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAA  
 AAATCCCTCATTCAGCCTTTCTATATAAATAGCTCTTTCTGCTGTTTTAATGTGGTGACACTATAGC  
 CTCACAAACCTGTATTCCAGTGTAACTGTCAGTGTGTAAGTAAAGTTACTGGCTTGGTCTTATTTGCA  
 CAGTTTTTGGCTCTGTTTGTCTTCTGTCATCTGATTAACCTAGAATATTTCTCTTTCCCCCTTTTAAATTTG  
 TGATGTCACCTGACCCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGAT  
 ACATCTTGTGTGCAGAAAGTATCTTCTCCAGGCTTGAATACCTTCACATGGAAGATTAATGAGGGA  
 AATCTTTATATTCTGTATAAAACAAAAGCAAATTTATATACTAAAATCATTGTCTAAAAATTTAAGTT  
 GTTTTCAAATAAAAAATTAATGCAATTTCTGATATGCAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var6 (public gi: 14250078) (SEQ ID NO: 167)

AGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGGCGGCGGCTGAACGCGGAGGGGGCGGAGGGAGCC  
 CGCGGCGGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAGC  
 CGCAGAACCTGAATGACGCCCTACGGACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCCGAAAC  
 GGTGGGGTGGCGCGGGGCGGCTTCACTACTTACGAAATCAGGGTCAAGACAAATCTTCTATTTTCAAG  
 CTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGA  
 GCAAGGTCGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGGCTGAGCTTCTTTTAGAGGAGATGATGG  
 AATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAACAAGGTCGCTGGT  
 CATCTCTGGCACAGAACGACGTTGTCTTACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATA  
 CTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGGCAAAACGCTGACTATTAATGATTGATA  
 AGCACCAGTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAACTGGTATAACATGCCTTCAGTATACT  
 AACACTCATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCC

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CTCATTCCAGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAATGTGGTGCACACTATAGCCTCACA  
AACCTGTTATTCCAGTGAATCTGCAGTGTGTAACCTAAAGTTACTGGCTTGGTCTTATTGACAGTTT  
TTGCGTCTTGTGTTGCTTCTGCATCTGATTAACCTAGAATATTTCTCTTTCCCCCTTTAATTTGTGATGT  
CACTTGACCCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGATACATAC  
TTGTGTGCAGAAAGTATCTTCTCCAGGCTTGTAAATACCCTTCACATGGAAGATTAATGAGGGAAATCTT  
TATATTCTGTATAAAAAACAAAGCAAATTTATATACTAAAATCATTTGTCTAAAAATTTAAGTTGTTTTTC  
AAATAAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAX

Human SNX3 mRNA sequence - var7 (public gi: 12957159) (SEQ ID NO: 168)  
GGGCGAGGAGGGAGCCCGCGGCGGCGAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGG  
CGGCTGATCACCAAGCCGAGAACCTGAATGACGCCTACGACCCCCAGCAACTTCCCTCGAGATCGATG  
TGAGCAACCCGCAACCGGTGGGGGTGCGCCGGGGCCGCTTACCACCTTACGAAATCAGGGTCAAGGTCGT  
AGTTCCTCCCGCTCCCTGGGAAAGCGTTTTTTCGCTCAGCTTCCCTTTAGAGGAGATGATGGAATATTTGAT  
GACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAACAAGGTCGCTGGTTCATCCTCTGG  
CACAGAACGAACGTTGTCTTACATGTTTTTACAAGATGAAATAATAGATAAAAAGCTATACTCCATCTAA  
AATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAATGATTGATAAGCACCAGTG  
AAGAAGTTCTAAGTTTTAGCATGCTGCACAGAACTGGTATAACATGCCTTCAGTATACTAACACTCATA  
TGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTGCTTTAGTAAAAATCCCTCATTCCAG  
CCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAATGTGGTGCACACTATAGCCTCACAACCTGTTAT  
TCCAGTGTAATCTGCATGTCGTAAGTAAAGTTACTGGCTTGGTCTTATTGACAGTTTTTTCGCTCTTG  
TTTGCTTCTTGCTATCTGATTAAGTAACTAGAAATTTCTCTTTCCCCCTTTAATTTGTGATGTCATGACCC  
CATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGATACATACTTGTGTGCAG  
AAAGTATCTTCTCCAGGCTTGTAAATACCCTTCACATGGAAGATTAATGAGGGAAATCTTTATATTCTGT  
ATAAAAAACAAAGCAAATTTATATACTAAAATCATTTGTCTAAAAATTTAAGTTGTTTTCAAATAAAAAAT  
TAAATGCATTTCTGATATGCAAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAX

Human SNX3 mRNA sequence - var8 (public gi: 34304374) (SEQ ID NO: 169)  
GTCCGGCCGGAACCTGTTTGCGACCCCGAGTCCCATGACACCGCTTCTCCTCACACCCAGTCCGCGAGT  
CCCCCTCCCAGCCTCGGCCGGGCTCCCGGGAGCCGGGCGTGGCGTTCCAGCTAGTGAGCCGTTTCTCCC  
CTGGGCTCGGAGGCGGAAGCTTGAGGGGCGCGGGGAGGAGCTTCGCGTGCAGGGTGAACGCCCGCTCTAC  
GTGCTCGTTCTCTTCGCGACCGCTGCGCGCGAGCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGGCGGCG  
GCGGCTGAACGCGGAGGGGCGGAGGGAGCCCGCGGCGGCGGCGAGCTACAGCGAAATGGCGGAGACC  
GTGGCTGACACCCGCGGCTGATCACCAAGCCGCAAGACCTGAATGACGCCTACGAGACCCCGAGCAACT  
TCCTCGAGATCGATGTGAGCAACCCGCAACCGTGGGGGTGCGCCGGGGCCGCTTACCACCTTACGAAAT  
CAGGGTCAAGACAAATCTTCTATTTTCAAGCTGAAAGAACTACTGTTAGAAGAAGATACAGTGACTTT  
GAATGGCTGCGAAGTGAATTAGAAAGAGAGCAAGGTCGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTT  
TGCCTCAGCTTCTTTAGAGGAGATGATGGAATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGG  
GCTGGAGCAGTTTATAACAAGGTCGCTGGTCACTCTCTGGCACAGAACGAGCTTGTCTTACATGTTT  
TTACAAGATGAAATAATAGATAAAAAGCTATACTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAA  
GGGGCAAAAACGTGACTATTAATGATTGATAAGCACCAGTGAAGAAGTTCTAAGTTTTAGCATGCTGCAC  
AGAACTGGTATAACATGCCTTCAGTATACTAACACTCATATGCTCAGTTTTGTTTTGTTTTGGCAGTTG  
ACAAGAAGTTAATTTAGTAAAAATCCCTCATTCCAGCCTTTCTATATAAATAGCTCTTTCTTGCT  
GTTTTAATGTGGTGCACACTATAGCCTCACAAACCTGTTATTCCAGTGTAACTGTCAGTGTCTGTAAC  
AGTTACTGGCTTGGTCTTATTTGCACAGTTTTTTCGCTCTTGTGCTTCTTGCATCTGATTAAGTAAAT  
ATTTCTCTTTCCCCCTTTTAAATTTGTGATGTCACTTGACCCCATTTATGTGTAGGAGCACTACACCATTG  
GTTTCCAATACTGCACACATAAGATACATACTTGTGTGCAGAAAGTATCTTCTCCAGGCTTGTAAATACC  
CTTCACATGGAAGATTAATGAGGGAAATCTTTATATTCTGTATAAAAAACAAAGCAAATTTATATACTAA  
AATCATTTGTCTAAAAATTTAAGTTGTTTTCAAATAAAAAATTAATGCATTTCTGATATGCAAAAAAAX  
AAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAXAAAAAAX

Human SNX3 mRNA sequence - var9 (public gi: 30583066) (SEQ ID NO: 170)  
ATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAAGCCGAGAACCTGAATGACGCCTACGGAC  
CCCCAGCAACTTCCCTCGAGATCGATGTGAGCAACCCGCAACCGTGGGGGTGCGCCGGGGCCGCTTAC  
CACTTACGAAATCAGGTCAGGACAAATCTTCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGA  
TACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGGTCGTAGTTCCCCCGCTCCCTG  
GGAAAGCGTTTTTTCGCTCAGCTTCTTTAGAGGAGATGATGGAATATTTGATGACAATTTTATTGAGGA  
AAGAAAACAAAGGGCTGGAGCAGTTTATAACAAGGTCGCTGGTTCATCTTGGCACAGAACGAGCTTGT  
CTTCACATGTTTTTACAAGATGAAATAATAGATAAAAAGCTATACTCCATCTAAAATAAGACATGCCTAG

Human SNX3 mRNA sequence - var10 (public gi: 3127052) (SEQ ID NO: 171)  
GGGCGAGGAGGGAGCCCGCGGCGGCGAGCACTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGG

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CGGCTGATCACCAAGCCGAGAACCTGAATGACGCCCTACGGACCCCCAGCAACTTCCTCGAGATCGATG  
 TGAGCAACCCGCAAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAA  
 TCCTTCCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGT  
 GAATTAGAAAGAGAGAGCAAGGTCGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCCTCAGCTTCCTT  
 TTAGAGGAGATGATGGAATATTTGATGACAATTTTATTAGGAAAGAAAACAAGGGCTGGAGCAGTTTAT  
 AAACAAGGTCGCTGGTCATCCTCTGGCACAGAACGAACGTTGTCTTCACATGTTTTTACAAGATGAAATA  
 ATAGATAAAAGCTATACTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACGTGA  
 CTATTAATGATTGATAAGCACCAAGTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAACTGGTATAAC  
 ATGCCTTCAGTATACTAACACTCATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTT  
 GCTTTAGTAAAAATCCCTCATTCCAGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAATGTGGTGC  
 AACTATAGCCTCACAAACCTGTTATTCAGTGTAATCTGCAGTGTGCTAACTAAAGTTACTGGCTTGGT  
 CTATTTGACAGTTTTTGGCTCTGTTTGGCTCTTGCTGCTGATTAAGTAAATATTTCTCTTTCCCCC  
 TTTTAATTTGTGATGCTACTTGACCCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCA  
 CACATAAGATACATACTTGTGTGCAGAAAGTATCTTCTCCAGGCTTGTAATACCTTCACATGGAAGAT  
 TAATGAGGGAAATCTTTATATTCTGTATAAAAAACAAAGCAAATTTATATACTAAAATCATTTGTCTAAA  
 AATTTAAGTTGTTTTCAAATAAAAATTAATAATGCATTTCTGATATGCAAAAAAAAAAAAAAAAAAAAAA  
 AAAAAAAAAA

Human SNX3 mRNA sequence - var11 (public gi: 3126978) (SEQ ID NO: 172)  
 GCGGCACAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAAGCCGAGAAC  
 CTGAATGACGCCTACGACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCCGCAAAACGGTGGGGG  
 TCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAATCTTCTATTTTCAAGCTGAAAGA  
 ATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGGTC  
 GTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCCTCAGTTCCCTTTTAGAGGAGATGATGGAATATTTG  
 ATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAACAAGGTCGCTGGTCATCCTCT  
 GGCACAGAAGCAACGTTGTCTTCACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATCT  
 AAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACCGTGAATTAATGATTGATAAGCACCA  
 GTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAACTGGTATAACATGCCTTCAGTATACTAACACTC  
 CATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATT  
 CCAGCCTTTCTATATAAATAGCTCCTTCTGCTGTTTTAATGTGGGTGCACACTATAGCCTCACAACTG  
 GTTAATCCAGTGAATCTGCAGTGTGCTAACTAAAGTACTGGCTTGGTCTTAATTG

Human SNX3 protein sequence - var1 (public gi: 23111041) (SEQ ID NO: 287)  
 MAETVADTRRLITKPQNLNDAYGPPSNFLEIDVSNPQTVGVGRGRFTTYEIRVKVVPPLPGKAFLRQLP  
 FRGDDGIFDDNFI EERKQGLEQFINKVAGHPLAQNERCLHMFLODEI IDKSYTPSKIRHA

Human SNX3 protein sequence - var2 (public gi: 23111043) (SEQ ID NO: 288)  
 MAETVADTRRLITKPQNLNDAYGPPSNFLEIDVSNPQTVGVGRGRFTTYEIRVKTNLP I FKLKESTVRRR  
 YSDFEWLRLSELERESKPCRLMTSEARSHGRTWCAQNDEKLFCD

Human SNX3 protein sequence - var3 (public gi: 15779012) (SEQ ID NO: 289)  
 MAETVADTRRLITKPQNLNDAYGPPSNFLEIDVSNPQTVGVGRGRFTTYEIRVKTNLP I FKLKESTVRRR  
 YSDFEWLRLSELERESKVVVPPLPGKAFLRQLPFRGDDGIFDDNFI EERKQGLEQFINKVAGHPLAQNERC  
 LHMFLQDEI IDKSYTPSKIRHA

Human SNX3 protein sequence - var4 (public gi: 3126979) (SEQ ID NO: 290)  
 MAETVADTRRLITKPQNLNDAYGPPSNFLEIDVSNPQTVGVGRGRFTTYEIRVKTNLP I FKLKESTVRRR  
 YSDFEWLRLSELERESKVVVPPLPGKAFLRHFPFRGDDGIFDDNFI EERKQGLEQFINKVAGHPLAQNERC  
 LHMFLQDEI IDKSYTPSKIRHA

Human SNX3 pray sequence - var1 (SEQ ID NO: 173)  
 GCCGCCATGGNAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATCCAC  
 CCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCGCGCGCGCGCGCTGAACGCGGAGGGGGCGG  
 AGGGAGCCCGCGCGCGCGCGAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGCGCGCTGAT  
 CACCAAGCCGAGAACCTGAATGACGCCTACGACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAAC  
 CCGCAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAATCTTCCTA  
 TTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATCAGA  
 AAGAGAGAGCAAGGTCGTAGTTCCCNNGCTCCCTGGGAAAGCGTTTTTGCCTCAGCTTCCTTTTAGAGG  
 AGATGATGGAATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAACAAG  
 GTCGCTGGTCATCCTCTGGCACAAAACGAACGTTGTCTTCACATGTTTTTACANGATGAAATANTNGATA  
 AAAGCTNTACTCCATCTAAAATAAAACATGCCTGAANTTTGGCANAANGGCNAAAACGTGACTATTATG

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ATTGANAGCCCCNNNNAAAANTTCTANNTTNNCNTGCTNACAAAACGTGNNTAANTGCCTNANNTACTAA  
CCTNNNTNCCNANTTTNNTTTGNNTGGNNNTNAAAAAATNAT

Human SNX3 pray sequence - var2 (SEQ ID NO: 174)

CCGCCATGGTAGTACCCATACGACGTACCACTATTACGCTCATATGGCCATGGCAGGCCAGTGAATTCCA  
CCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCCGGGGGAGGAGGGAGCCAGCGGCGGGCA  
GCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAGCCGAGAACCTGAA  
TGACGCCTACGGACCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCCGCAACCGGTGGGGGTGGC  
CGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAATCTTCTATTTTCAAGCTGAAAGAATCTA  
CTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGGTCGTAGT  
TCCCCCGCTCCCTGGGAAAGCGTTTTTGGCTCAGCTTNCCTTTAGAGGGGATGATGGAATATTTGATGAC  
AATTTTATTGAGGAAAGAAAACAAGGGCTGGANCAANTTTATNAACAAGTNAGTGCTTNCCTATTCTTAAA  
GTGTANGACTNCTTTAAGTGACTACTTTTNTTTANATGTNAANNNACTGNACTGTNNCNTTTNTTTNAN  
CNTTCTCTANNTTTNATTTNTTTAA

Unigene Name: SRA1 Unigene ID: Hs.32587 Clone ID: 3GD\_19

Human SRA1 mRNA sequence - var1 (public gi: 10436964) (SEQ ID NO: 175)

ACGTGAAGCCGGGTGAGCGCAGCCGGCGGGCTAGGGCACTAGGTCGTCGCCCCGGCCTAGGCTGGGGGGC  
GTTGCGGCGCTTAGTATGGACCCTCTGTCTCCCCAGCCCCAGTATAAGCTAACAGTGGAGTTCCGGGCT  
CGCTTCACACATCCCTCGCCTCCGCAGGCAACAAGGAACGCGCTGGAACGACCCCGCCGAGTTCTCATA  
CGGGCTGCAGACCCAGCGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGCCGCACCCAGGAT  
GGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCTGGGCTCCCCCAATGGGGCTCCACCTCTTCAA  
GTAAGGTTCCAGGTCCCCACCTGTGGGGAGTGGTCTGCTCTGGCGTGGAGCCCAAGTTTCCAGT  
CGAGTCTGAGGCTCGACTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGACTGCCGTGGC  
CACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCTGGCACTGCTGCAGGAACAGTGGGCTGGAG  
GAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCCACCGGTGGGA  
CGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTGAGTCACTGAGTGGTAGGA  
GTTAAAAGATTAAATGCAGAAAAGAGGAGTCTGTTTTTCAAGAGAGGCAGCCAATGAAGAGAAATCTGCAG  
CCACAGCTGAGAAGAACCATAACCATACAGGCTTCCAGCAGGCTTCATAATCCTCGGTTCCCGAGACTCA  
CCGGACACCATCTCCTATGCCTTGGAGACCTTCTGTCACTTGGCTCCCTTCTTACCACCACCAAGACTGT  
CCCCTGGGCTGACCCACCTATGAGGGAAGAAGTCCCACCTGGGCCAGAGGGAGTTTATGTGTTACTCA  
TAACATGCATTTCAATAAAAAACATCTCTGCGGTGGGCTTGGGTAGGAGAGATGAACCCCTCCGGTGCCA  
AGCTAGTCCCCTCTGGTGTCTCTGACTGCCCTGCTCCCTGTGTATCTGCAAACTCTGTTCTCCCTTCTC  
CATTTCATCAGGAAGGGATCTGCTGGGTAAAGTCAAGTACTGCTTACCCTTTTCCCAAAGTAGACTGA  
AAGCACATCCTGTGCTGGGCGGAGCAGCTGTGTTTGGATGGTTTCATTTCAGCATGAGAACAGACTCAAA  
TAGAACGGGGAGACTTTTCCCTCAACAAAAGGAAAGACAGTCTTATTGCACTGTATCACCCTTGAGATA  
CTACTGTTACAGAGATTAGAACCACATTGAGTGGGTTTCTGTGTAAATCGAAGGAGAAAAAGACCAGA  
TTACTGAGATTGGGGATTGTAACCTGACTTGCCAAACAACTGCTGCCTCAAAAAAAAAAAAAAAAAA

Human SRA1 mRNA sequence - var2 (public gi: 9930611) (SEQ ID NO: 176)

TCCTTTGGTGCCTTGTGACCAGGGCCCTGATGGTTTCATTAGATGGAGCCTTCGAGTCTTAGGGAGTTGCC  
GCAGGGTCCCCACAGCGGCTCCCGACGGTTGTGAACCAGCATCCATCCTCCACGGATTCCGGCAACCCGC  
CTGGCCCTGGACGTGTCTCAACTGGCCCCGCTGAGGGGCCGCCCCGGAATGACGCGCTGCCCCGCTGGC  
CAAGCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACCCGC  
CGCAGTTCTCATAAGGGCTGCAGACCCAGGCGGCGGACCCAGGCGCTCGCTGCTTATCAAGAGGTCGC  
CGCACCCACAGGATGGATCCCCAGAGTCCCGCATCAGAGACTTCTCTGGGCTCCCCCAATGGGGCT  
CCACCTCCTTCAAGTAAGGCTCCAGGTCCCCACCTGTGGGGAGTGGTCTGCCTCTGGCGTGGAGCCCA  
CAAGTTTCCAGTTCGAGTCTGAGGCTGTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGA  
CTGCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCTGGCACTGCTGCAGGAACAG  
TGGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCC  
ACCGGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTGAGTCACTG  
GATGGTAGGAGTTAAAGATTAAATGCAGAAAAGAGGAGTCTGTTTTTCAAGGAGGAGCCCAATGAAGAG  
AAATCTGCAGCCACAGCTGAGAAGAACCATACCATACAGGCTTCCAGCAGGCTTCATAATCCTCGGTTCC  
CCAGACT

Human SRA1 mRNA sequence - var3 (public gi: 9930613) (SEQ ID NO: 177)

TCCTTTGGTGCCTTGTGACCAGGGCCCTGATGGTTTCATTAGATGGAGCCTTCGAGTCTTAGGGAGTTGCC  
GCAGGGTCCCCACAGCGGCTCCCGACGGTTGTGAACCAGCATCCATCCTCCACGGATTCCGGCAACCCGC  
CTGGCCCTGGACGTGTCTCAACTGGCCCCGCTGAGGGGCCGCCCCGGAATGACGCGCTGCCCCGCTGGC  
CAAGCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACCCGC



CGCAGTTTCTCATACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGC  
CGCACCCAGGATGGATCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCCAATGGGGCCT  
CCACCTCCTTCAAGTAAGGCTCCAGGTCCCCACCTGTGGGGAGTGGTCTGCCTCTGGCGTGGAGCCCA  
CAAGTTTCCCAGTTCGAGTCTGAGGCTCGACTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGA  
AGACTGCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCTGGCACTGCTGCAGGAA  
CAGTGGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAA  
GCCACCGGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTGAGTCA  
GTGGATGGTAGGAGTTAAAGATTAAATTGCAGAAAAGAGGAGTCTGTTTTTCAGAGGAGGCAGCCAAATGAA  
GAGAAATCTGCAGCCACAGCTGAGAAGAACCATAACCATAACAGGCTTCCAGCAGGCTTCATAATCCTCGG  
TTCCCCAGACT

Human SRA1 mRNA sequence - var4 (public gi: 4588026) (SEQ ID NO: 178)

CGCTTGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACCCGCCGAGTTCTCAT  
ACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGCCGACCCAGGA  
TGGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCAATGGGGCCTCCACCTCCTTCA  
AGTAAGGCTCCAGGTCCCCACCTGTGGGGAGTGGTCTGCCTCTGGCGTGGAGCCCAAGTTTCCCAG  
TCGAGTCTGAGGCTGTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGACTGCCGTGGCCA  
CACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCTGGCACTGCTGCAGGAACAGTGGGCTGGAGGA  
AAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCCACCGGTGGGACG  
CAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTGAGTCACTGAGTGGATGGTAGGAGT  
TAAAGATTAAATTGCAGAAAAGAGGAGTCTGTTTTTCAGAGGAGGCAGCCAAATGAAGAGAAATCTGCAGCC  
ACAGCTGAGAAGAACCATAACCATAACAGGCTTCCAGCAGGCTTCATAATCCTCGGTTCCCCAGACTCACC  
GGACACCATCTCCTATGCCTTGAGACCTTCTGTCACTTGGCTCCCTTCTTACCACCACCAAGACTGTCC  
CACTGGGCCTGACCCACCTATGAGGGAAGAAGTCCCACCTGGGCCAGAGGGAGTTTATGTGTTACTCATA  
ACATGCATTTCATAAAAACATCTCTGCGGTGGTG

Human SRA1 mRNA sequence - var5 (public gi: 25123254) (SEQ ID NO: 179)

GGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACCCCGCCGAGTTCTCATACGGGCT  
GCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTCGCCGACCCAGGATGGATCC  
CCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCAATGGGGCCTCCACCTCCTTCAAGTAAGG  
CTCCAGGTCCCCACCTGTGGGGAGTGGTCTGCCTCTGGCGTGGAGCCCAAGTTTCCCAGTTCGAGTC  
TGAGGCTGTGATGGAGGATGTGCTGAGACCTTTGGGAACAGGCATTGGAAGACTGCCGTGGCCACACAAGG  
AAGCAGGTATGTGATGACATCAGCCGACGCTGGCACTGCTGCAGGAACAGTGGGCTGGAGGAAAGTTGT  
CAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCCACCGGTGGGACGCGAGCAGA  
TGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTGAGTCACTGAGTGGATGGTAGGAGTTAAAGA  
TTAATTGCAGAAAAGAGGAGTCTGTTTTTCAGAGGAGGCAGCCAAATGAAGAGAAATCTGCAGCCACAGCTG  
AGAAGAACCACATACCAGGCTTCCAGCAGGCTTCATAATCCTCGGTTCCCCAGACTCACCAGACACC  
ATCTCCTATGCCTTGAGACCTTCTGTCACTTGGCTCCCTTCTTACCACCACCAAGACTGTCCCAGTGGG  
CCTGACCACCTATGAGGGAAGAAGTCCCACCTGGGCCAGAGGGAGTTTATGTGTTACTCATAACATGCA  
TTTCAATAAAAACATCTCTGCGGTGAAAAA

Human SRA1 mRNA sequence - var6 (public gi: 18027813) (SEQ ID NO: 180)

GCAGGCACTAAGCTGGGCCTGGGAATGTAATAAAATAGTCAAGGTCCACCTTCTAAGACTGTCCGACA  
GGGAAACGAACAAGAGTCAAATAAGGCAGAAGATGTGATGTAATACACCTACGAAATCTCAGAGGGTTGT  
AGGGTCGTGGGAGCTCAAGTGAACACTTAACCTGGCCTGAGACATTCCAGAAGGCCTCCTGAAGAACTG  
ACATCTGAAGTGAAGTGAAGGAAGATGAGTACTAGTGAAGGTACCGGACGTGAATGTGGAGATTGTGC  
AGGGCAATGCAAGAGGAGGCTGTAGAAGTCAACCTGGCTAGATCACAGCGGGGTGTATGTGGGGCAGGAG  
CTTCTTTGTTTGAATTTGCTCCTGAGAGGATGAGGCCTCCTAGAGCACTGGCTCCTGGACAGCAACCTCC  
TTTGGTGCTTGTGACCAGGGCCCTGATGGTTTATTAGATGGAGCCTTCGAGTCTTAGGGAGTTGCCGCA  
GGGTCCCAAGCGGCTCCCGACGCTTGTGAACAGCATCCATTCTCCACGATTCCGGCAACCCGCTG  
GCCCTGGACGTGTCTCAACTGGCCCGCTGAGGGCCGCCCCGAAATGACGCGCTGCCCGCTGGCCAA  
GCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACCCGCCG  
AGTTCTCATACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGCCGC  
ACCCAGGATGGATCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCAATGGGGCCTCCA  
CCTCCTTCAAGTAAGGCTCCAGGTCCCCACCTGTGGGGAGTGGTCTGCCTCTGGCGTGGAGCCCAAA  
GTTTCCCAGTTCGAGTCTGAGGCTCGACTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGA  
TGCCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCTGGCACTGCTGCAGGAACAG  
TGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCC  
ACCGGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTGAGTCACTG  
GATGGTAGGAGTTAAAGATTAAATTGCAGAAAAGAGGAGTCTGTTTTTCAGAGGAGGCAGCCAAATGAAGAG  
AAATCTGCAGCCACAGCTGAGAAGAACCATAACCATAACAGGCTTCCAGCAGGCTTCATAATCCTCGGTTCC  
CCAGACTCACCAGACCATCTCCTATGCCTTGAGACCTTCTGTCACTTGGCTCCCTTCTTACCACCA

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CCAAGACTGTCCCACTGGGCCTGACCCACCTATGAGGGAAGAAGTCCCACTGGGCCAGAGGGAGTTTCAT  
GTGTACTCATAACATGCATTTCAATAAAAAACATCTCTGCGGTGGAAAAAAAAAAAAAAAAAAAA

Human SRA1 mRNA sequence - var7 (public gi: 16549596) (SEQ ID NO: 181)

TTATAGCAAAATCAGTGCAATAAAAAATCCCTCAGTGACCTCACTGGATGTGAGTATATTGGGCCTGGGA  
CAGGGCTGGGGGCTAACACCCCTGTGTGAGATGAGTGTCTTTGTGTCTGTGCTTGATGTTGGTGGCTCTCT  
GTAGTCACATGACAGCATGGGTGTGATGGAGATCTGACTTCATTCAACAAACATATTTTCTAAGGAGTTC  
CCTGTGCCAGGCACTAAGCTGGGCCTGGGAATGTAATAAAATAGTCAAGGTCCCACCTTCTAAGACTGT  
CCGACAGGGAACGAAGAGTCAAATAAGGCAGAAAGATGTGATGTAATACACCTACGAAATCTCAGAG  
GGTTGTAGGGTCTGTGGGAGCTCAAGTGAGACACTTAACCTGGCCTGAGACATTCCAGAAGGCCTCCTGAA  
GAACTGACATCTGAACTGAGAAGTGAAGGAAGATGAGTACTAGTGAGGCTACCGGACGTGAATGTGGAGA  
TTGTGCAGGGCAATGCAAGAGGAGGCTGTAGAAGTCAACCTGGCTAGATCAGAGCGGGGTGTATGTGGGG  
CAGGAGCTTCTTTGTTGAATTTGCTCCTGAGAGGATGAGGCCCTCTAGAGCACTGGCTCCTGGACAGCA  
ACCTCCTTTGGTGCTTGTGACAGGGCCCTGATGGTTTCATTAGATGGAGCCTTCGAGTCTTAGGGAGTT  
GCCGCAGGGTCCCAACAGCGGCTCCCGACGGTTGTGAACAGCATCCATTCTCCACGGATTCCGGCAACC  
CGCCTGGCCCTGGACGTGTCTCAACTGGCCCGCTGAGGGGCCGCCCGGAAATGACGCGCTGCCCGCT  
GGCCAAGCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGCTGGAACGACC  
CGCCGCAGTTCTCATACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGT  
AGCCGCACCCCAAGGATGGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCAATGGGG  
CCTCCACCTCCTTCAAGTAAGGCTCCCAAGTCCCCACCTGTGGGAGTGGTCTGCTGCTGCGCTGGGAGC  
CCACAAGTTTCCCACTCGAGTCTGAGGCTCGACTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATT  
GGAAGACTGCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCTTGGCACTGCTGCAG  
GAACAGTGGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTT  
CAAGCCACCCGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTGAG  
TCAGTGGATGGTAGGAGTTAAAGATTAAATTGCAGAAAAGAGGAGTCTGTTTTTCAGAGGAGGCAGCCAAAT  
GAAGAGAAATCTGCAGCCACAGCTGAGAAGAACCATAACCATAACAGGCTTCCAGCAGGCTTCATAATCCT  
CGGTTCCCCAGACTCACCGGACACCATCCCCTATGCCTTGGAGACCTTCTGTCACTTGGCTCCCTTCTTA  
CCACCACCAAGACTGTCCCACTGGGCCTGACCCACCTATGAGGGAAGAAGTCCCACCTGGGCCAGAGGGA  
GTTCACTGTGTACTCATAACATGCATTTCAATAAAAAACATCTCTGCGGTGGGCCTTGGGTAGGAGAGATG  
AACCTTCCGGTGCCCAAGCTAGTCCCTCTGGTGCTCTGACTGCCCTGCTCCCTGTGTATCTGCAAAACC  
TCTGTTCTCCCTTCTCCATTATCAGGAAGGGATCTGCTGGGTAAGTCAAGTCACTACTGCTTACCATTCTT  
TCCCAAAGTAGACTGAAAGCACATCCTGTGCTGGGCGGAGCAGCTGTGTTTGGATGGTTTCATTTACAGCA  
TGAGAACAGACTCAAATAGAACGGGAGACTTTTCCCTCAACAAAAGGAAAGACAGTCTATTTGCACTG  
TATCACCTTGAGATACTACTGTTACAGAGATTAGAACC

Human SRA1 mRNA sequence - var8 (public gi: 9930609) (SEQ ID NO: 182)

TCCTTTGGTGCTTGTGACCAGGGCCCTGATGGTTTCATTAGATGGAGCCTTCGAGTCTTAGGGAGTTGCC  
GCAGGGTCCCCACAGCGGCTCCCGACGGTTGTGAACCAGCATCCATCCTCCACGGATTCCGGCAACCCGC  
CTGGCCCTGGACGTGTCTCAACTGGCCCGCTGAGGGGCCGCCCGGAAATGACGCGCTGCCCGCTGGC  
CAAGCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGCTGGAACGACCCGC  
CGCAGTTCTCATACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGC  
CGCAGCCAGGATGGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCAATGGGGCT  
CCACCTCCTCAAGTAAGGCTCCCAAGTCCCCACCTGTGGGAGTGGTCTGCTGCTGCTGCTGGCGTGGAGCCCA  
CAAGTTTCCCACTCGAGTCTGAGGCTGTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGA  
CTGCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCTTGGCACTGCTGCAGGAACAG  
TGGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCC  
ACCGGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTCACTGAGT  
GATGGTAGGAGTTAAAGATTAAATTGCAGAAAAGAGGAGTCTGTTTTTCAGAGGAGGCAGCCAATGAAGAG  
AAATCTGCAGCCACAGCTGAGAAGAACCATAACCATAACAGGCTTCCAGCAGGCTTCATAATCCTCGGTTCC  
CCAGACT

Human SRA1 protein sequence - var1 (public gi: 9930610) (SEQ ID NO: 291)

MTRCPAGQAEVEMAELYVKPGNKERGWNDPPQFSYGLQTQAGGPRRSLLTKRVAAPQDGSPRVPASETSP  
GPPPMGPPPPSSKAPRSPVVGSGPASGVEPTSFVVESEAVMEDVLRPLEQALEDCRGHTRKQVCDIISRR  
LALLQEQWAGGKLSIPVKKRMALLVQELSSHRWDAADDIHRSLMVDHVTEVSQWMVGVKRLIAEKRSIFS  
EEAANEKSAATAEKNHTIPGFQQAS

Human SRA1 protein sequence - var2 (public gi: 25123255) (SEQ ID NO: 292)

MGPPPPSSKAPRSPVVGSGPASGVEPTSFVVESEAVMEDVLRPLEQALEDCRGHTRKQVCDIISRR  
LALLQEQWAGGKLSIPVKKRMALLVQELSSHRWDAADDIHRSLMVDHVTEVSQWMVGVKRLIAEKRSIFS  
EEAANEKSAATAEKNHTIPGFQQAS

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Human SRA1 protein sequence - var3 (public gi: 9930614) (SEQ ID NO: 293)  
MTRCPAGQAEVEMAELYVKPGNKERGWNDPPQFSYGLQTQAGGPRRSLLTKRVAAPQDGSPRVPASETSP  
GPPPMGPPPPSSKAPRSPFVSGSPASGVEPTSFPVESEARLMEDVLRPLEQALEDCRGHTRKQVCDDISR  
RLALLQEOWAGGKLSIPVKRMLLVQELSSHRWDAADDIHRSLMVDHVTEVSQWMVGKRLIAEKRSLF  
SEEAANEEKSAATAEKNHTIPGFQQAS

Human SRA1 protein sequence - var4 (public gi: 9930612) (SEQ ID NO: 294)  
MTRCPAGQAEVEMAELYVKPGNKERGWNDPPQFSYGLQTQAGGPRRSLLIKRVAAPQDGSPRVPASETSP  
GPPPMGPPPPSSKAPRSPFVSGSPASGVEPTSFPVESEAVMEDVLRPLEQALEDCRGHTRKQVCDDISR  
LALLQEOWAGGKLSIPVKRMLLVQELSSHRWDAADDIHRSLMVDHVTEVSQWMVGKRLIAEKRSLF  
EEAANEEKSAATAEKNHTIPGFQQAS

Unigene Name: SYNE1 Unigene ID: Hs.416719 Clone ID: 3GD\_138aa2938

Human SYNE1 mRNA sequence - var1 (public gi: 21753084) (SEQ ID NO: 183)  
GTACAAAAACGAACCTTTCACAAAATGGATCAACTCTCATCTGGCCAAGCGGAAACCTCCAATGGTGGTGG  
ACCATCTTTTTGAAGACATGAAAGATGGTGTAAACTGCTTGCCCTTCTGGAGGTCCTGTCTGGGCAGAA  
ACTGCCTTGTGAACAAGGACGCCGATGAAGCGAATCCATGCTGTGGCTAACATTGGCAGGGCACTCAAG  
TTCCTCGAAGGAAGAAAGATTAAATTAGTCAACATTAACTCCACCGATATAGCTGTATGGCCGACCCTCAA  
TAGTTCTTGGATTGTATGTGGACCATTAATCTATATTTCCAGATTGAAGAGTTGACCAGCAACCTGCCCA  
GCTCCAGTCTTTGTCCAGCAGCGCATCTCTCCGTGGACAGCATAGTTAGCTCTGAGACTCCCAGCCCACCA  
AGTAAACGGAAGGTGACCACCAAGATCCAAGGAAATGCTAAGAAGGCTTTATTAAAGTGGGTTCAGTACA  
CAGCTGGCAAGCAGACTGGAATAGAAGTAAAAGATTTTGGGAAGAGTTGGAGAAGCGGGGTTGCCTTTCA  
TTCAGTTATTCAATGCGATTTCGACCGAATTGGTGGACTTGGAGACAGTGAAAGGCAGATCCAACCGAGAA  
AATTTGGAGGATGCTTTCACTATCGCTGAAACAGAACTGGGGATCCCAAGACTGCTAGATCCTGAAGACG  
TTGATGTGGATAAACAGATGAGAAATCTATTATGACCTATGTAGCCCAGTTTCTGAAACATTATCCTGA  
CATCCACAATGCAAGCAGTGTGGCAGAGGATGATGAAATACTTCCAGGTTTCCCATCTTTTGCAAAT  
TCTGTACAAAATTTTAAGAGAGAAGACAGAGTAATTTTAAAGGAAATGAAAGTTTGGATAGAACAAATTTG  
AGAGAGATTTGACAAGAGCACAGATGGTGGAAATCAAATTTACAGGATAAATATCAGTCATTTAAGCACTT  
CAGAGTTCAATATGAAATGAAGAGGAAACAGATTGAACATTTAATACAACCATTAACACAGAGACGGTAAA  
TTGTCACTTGACCAAGCATTGGTAAAAACAATCTTGGGATAGAGTGACCTCCAGGCTCTTTGACTGGCATA  
TACAGCTTGATAAATCTCTTCTGCACCTCTGGGCACCATAGGTGCCCTGGCTGTACAGAGCGGAGGTGGC  
CCTGAGAGAGGAAATAACCGTTCAACAGGTCCACGAGGAAACAGCAACACGATACAACGAAACTTGAG  
CAACATAAGGATCTGCTTCAAAACACGGATGCCACAAAAGAGCATTCCATGAAATCTACCGGACCAGGT  
CTGTTAACGGGATTCCAGTGCCACCTGATCAATTAGAGGACATGGCCGAGAGGTTTCAATTTGTTTCCCTC  
CACATCAGAGCTACACCTAATGAAAATGGAATTTTGAATTAAGTACCGTCTGCTCTCACTGCTGGTT  
CTTGCAGAGTCAAAGCTGAAGTCTTGGATCATTAAGTACGGGAGGAGAGAGTCAGTGGAGCAGCTTCTAC  
AAAACACGTGTCTTTTATAGAAAATAGCAAGTCTTTGAACAATATGAGGTGACATACCAGATCTTGAA  
ACAGACAGCTGAGATGTATGTCAAAGCAGATGGTTCAGTGAAGAAGCTGAGAATGTGATGAAATTCATG  
AATGAAACCAACCGCTCAGTGGAGGAATCTCTCAGTAGAAGTGAGGAGTGTGAGGAGCATGCTGGAAGAAG  
TGATCTCTAACTGGGATCGCTATGGCAATACAGTGGCTAGTCTGCAAGCCTGGCTAGAGGATGCTGAAAA  
AATGCTCAATCAATCAGAAAAATGCCAAAAGGATTTTTCGAAATTTACCTCATTGGATTTCAGCAGCAT  
ACTGCCATGAACGATGCTGGCAATTTTCTAATTGAAACCTGTGATGAGATGGTTTCCCGTGACCTGAAGC  
AGCAATTACTGTTGCTAAATGGGCGGTGGAGGGAGTTGTTTATGGAAGTCAAGCAATATGCTCAAGCTGA  
TGAGATGGACAGAATGAAGAAGGAATACACAGACTGTGTTGTTACCTGTCTGCTTTTGAACGGAAGCC  
CATAAGAACTTTCTGAACCCTTAGAAGTCTCTTTATGAATGTCAAGCTATTAATTCAAGACTTGGAGG  
ATATTGAGCAGAGGGTGCCTGTGATGGATGCCCAATACAAGATAATTACAAAGACAGCACACCTCATTAC  
CAAAGAAAGCCCCC

Human SYNE1 mRNA sequence - var2 (public gi: 22382201) (SEQ ID NO: 184)  
AGCGGCTGCCTCCTTGTTGAGTGCTGCAAGGCCTGGAATTCATTTATGACAGAATAGATCTAGAAAAGT  
CCAAGCATGTTTTCTAGAGTGGTGTAGCCCTGTGCTGCCTCCAGTGAAGAGTCTCTTGGTGTGGCTTCG  
TGCTCCGGAGGGACCATGGCAACCTCCAGAGGGGCCCTCCCGGTGTCCTCGGGATATCGCCAATGTGATG  
CAGAGGCTGCAAGATGAGCAAGAGATAGTACAAAACGAACCTTTCACAAAATGGATCAACTCTCATCTGG  
CCAAGCGGAAACCTCCAATGGTGGTGGACGATCTTTTTGAAGACATGAAAGATGGTGTAAACTGCTTGC  
CCTTCTGGAGGTCCTGTCTGGGCAGAACTGCCTTGTGAACAAGGACGCCGATGAAGCGAATCCATGCT  
GTGGCTAACATTGGCACGGCACTCAAGTTCCTCGAAGGAAGAAAGATTAAATTAGTCAACATTAACTCCA  
CCGATATAGCTGATGGCCGACCCTCAATAGTCTTGGATTGATGTGGACCATTATTCTATATTTCCAGAT

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CCACAGCAGGATCTGCGGAGGGAGGTGCTGGGATCCTCCCTCCTCAGGGATGTGCAGATTTTCATATTGT  
ATCTTTCTGGATACCACAGGGAGAAGGGCATATTCGGCGGAGAGAGACCAAATGAAACCTTTTACAACCT  
CAGACAGAAGTAGGGTGGCTGAGCTTAACTAGGGGAAGCAGAATTGGGAATGGGGAGAATGGGAATGATGT  
GAGAAATCACATAGAGAAGACTCCTCCAGAACTCTCAGTCCATTGAACTGGGATGGAGGCGATTTTCTGG  
GCTGGGCATCTTGGTGAAGATGCAGGTGGTCTTAGGCCCTGAGGACCACAAGAGGGAAGGAGCACTGTG  
GGTGCAGGTGGGCAAGGGAGGTGGGGCTGTGAGAGCAGGGAGGGGATGAGTTTCTTGTGTGCATCCTGA  
TCTTGAGATACCTGCAGAATATCCAAATGCAAAAGTCCAGTCGTAGATGCACGGTGTGAAGTGCAGAAGC  
CAGAAATGCAGATTGGGTAGGTATTCATGTAAATGGCAATGGTCTTGGAGTGAACGGAGGAGCTCCCA  
CAGGAAGAGTGTGTGAAGGAAAAACAAGAAGGACCACCACCAAGCCACACATGCAGTGAAGGGATGGACA  
GAGAAACAGAACTCTGTAAGGAAGGTGAATAAAATAGAATAAAGAGTTGGAGGCTGATTTGTGGCACT  
TGGAAATGTATCTCATACATTCTGTCAAAGGACATCTGGGGAATTTCTGTTTGGTCTGGTGGTTACAT  
CAGATTTCCCAAGGGATGACACTGTTCTAAAAAGAAAAATGATTTCTCTCATTTCTATTTTGTCTTTACAGT  
AAGGCCATTAGTACAGGCATATGGCATCTGAAGCAGAGCTGTCCAAACCAGCCACTGGCCAGTTGGGAC  
TGTTGAGCTCTGAGATGGGACTGTGCAAAATTGAGATGGGTGTGTGCGTGGAAAAACATGCTTACATGAATTT  
CAAAGACTTAGTACAAGAAAGAAAAATAAATATTAATAATTATATTGATTACATGTTATAATCCCTGTCT  
AATGTAGTGTAAAATTAATTTTATAAGTTTCTTTTACATTTCTAATGTGGCTACGAAACCTTTAAGAT  
TACATATATAGTTACATAGAAATATATGGGACAGCCCTGCTCTGGAGTCTGGGCTGAAATCTCAGTTCT  
GCCATGTACTTTCTGTTTAACTTAGATAAGGAACCTAATTCCTCTGTGCCTCAGTTTTCTCATCTATAA  
AATGGGAATAACATTCCCAGGTACCTATAGGGTTTCTATGTGATAAAATTGTGCTCAGACCAGAGCCTG  
GCTCATAAAAAACTCTCAGTCACTGTGAGTCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGGAGACGA  
AGTCTAGTTCTGTTGCCAGGCTGGAGTGCAGTGGCACAATCTCGGCTCACTGCAACCTCCGCCCTCCCG  
GTTCAAGCGATCCTCCTGCCTCAGCTCCCATGTAGCTGGGATTACAGGTACCTGTCAACACACCTGGCT  
AATTTTTGTATTTTAGTAGAGATGGGGTCCACCATGTCCGCCAGGCTGGTCTCGAATTCCTGACCTCA  
GGTGATCCACCCGCTTGGCTTGGCTCCCAAGTGTGGGATACAGGCGTGAGCCACCACGCCACCTCATG  
TGAATTCCTATGATTCAATTCAGGAAAGCTTTGGTGAGCCTGCACGCTCCTCTGTGCGCTCAGGAGCTAT  
GTGTCTAGAATAACTGACTTCTTTTTTTTCCCTAGGAAAGTTATTTTCTGCACAAGGGATTACAGGT  
TTCCAGAACTTAGCTGTCAACTTAGACTGTGCTTTTTTGCAGATGTAATGATCCCCGAGAGCCCTGAGG  
CCTATGTAAAACTACAGAAAAATGCAATCAAAAATACCTCCGGTAGGCACAACAAGCCGGAGCCAGCCTC  
CCTCCCTCCCCGATAGCAATCCTCCTCTCTTAGGCACATCTGCTGTCTCTCTCCAGCTTTGTGGCTCT  
AGCATGTTAAGGCACAGCCTTCTCTCTTACTGCTGTACTAGAAAAACAGCTGGTTAAATCCACACCGA  
GAATAAGATTTCACTAATCGAGCGAAATAAAATAACTTCTCAACTTGTAAATGGTGATTGGTCTCATT  
GGTATAGACCTCTCATGTCCATTAAGTGCAGAAAAATAGAGAAGGAAAAACCCAGTCATCAGCCTCTGCGC  
CCTAGTGTCTACGTGGTGTGGTAATTTAGCTTCACTGCATGCAGACCTACCTGTGGCTGGAGACTCAG  
GGTGCAAGCTCTGGTCCCAAGTCCGCCAGCCTGCATGAGTGACCTTTGGCCCATCCACCATTATCCTC  
CTCATCTCAAGAATCCCGTATGAGACAAGGGGTGAGATCAGATTTAGCTCTAAAAAATATATGTAATTT  
TAATTTAAGAGGTCGTAAAAGATAATTTGAAATGAAAAATGTATTTACGGTATGCTGAGCCATAGATAA  
GAACAGAACTATTCTGAAACAGAAGAATTAAGAAAGAAAAATGGAAGTAGTTTTGCTTAGTGTGTG  
TTAGACAAACTGTAGTGCAGGAGTTACAGATCAGTGATGTGGGATGTCCGGCGGGGAATAGAGTTGAACG  
CAGTGATATGATTTGAATCAGGAGTTACTAGTTTACGCTTCACTTTTGAAGAAAAATCAAAAGGACAG  
AAAGCAAAAGTAACATTACTGAGAGGGTGATTCCAGGGAGGGACCTCTCCTAGGTGTATCTAGAAGGCCT  
TTTTTTAGAAAACAATAAAAAACATTTAATAAAGCTTACTAATATTTGTTCTGCTTTACCCCCATGCTAGC  
TTCACTGATGATCAAATGTTCTGTGTAGTTTCAAGACTTTGACACACACACACACACACACACACAC  
TCAGTAATTTTACAAAGAAATGTTACAACTTTGAGAGGAGAATGAGCCAGAATTTAGGCTATGAGTAAG  
AACCTGCCTAGATGGAATGTTAAATCTTAGCTTTCTCCTGGTTTTGTTTTCAGATCTTAGATAAAAAAGC  
AAGTCGTTGCTAGTTTGATATCTCTGTATATATCTATTCTGAGGCACTCTTTTCTTGATTAAATGAATTTA  
TGCCCTTCAGTAAATGATGCAGCAACCTGAGCCTTCCGTGACACTATCTTCCCCTGAGGTGCATGAAGAAA  
AATCAGAGGGAGGATCTTCCCCTGCTCACTAAGCGATAGCAGAAAGACATGAGAAAAAGAACAGCTTTC  
TCCTTACTGAGATGCAGTAGACACCATTCAGATTTTGAAGAGCCTTCCACACTGACAACATTCAGAT  
GATCAGGGGTTCACTGGAAGAGGGTCAGGTGCACGAAGCTGTTCAAAACGGACTGGAGAGCCGTTTTGCG  
GACGTCGATCTGCTAGGGCTCTCAGTCAAGCACCTTCAATGGTTTGGCCATTTTAAATGTCTAACCCACC  
GGCAGCATGGTACTAAATTTGCTTTGTAATTACCCACACCTGCCATTTCTATGCTGCTGTAACTGAAATC  
ATTTCTGAAACTTCTCCTTGAATATCAAGCTTTAAATAAGTCAAATAGTTTGTCCAGTAAAGATTCTTAT  
GGTTGCCACCGCAGGGGACCACAGTGCCCTAGAGTCACAGATCCGACAACCTGGGCAAGCCCTGGATGAT  
AGCCGCTTTTCAGATACAGCAAAACCGAAAAATATCATTGCGAGCAAACTCCCACGGGGCCGGAGCTAGACA  
CCAGCTACAAAGGCTACATGAACTGCTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGA  
GCACAAACTGAAGGAGGAAGAGGAGAGCCTTCTGGCTTTGTTAACCTGCATAGTACCGAAACCCAAACG  
GCTGGTGTGATTGACCGATGGGAGCTTCTCCAGGCCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAGA  
ACCTCCAGAAGTGGCAGCAGTTTAACTCAGACTTGAACAGCATCTGGGCCTGGCTGGGGGACACGGAGGA  
GGAGTTGGAACAGCTCCAGCGTCTGGAACCTCAGCACTGACATCCAGACCATCGAGCTCCAGATCAAAAAG  
CTCAAGGAGCTCCAGAAAGCTGTGGAACACCGCAAGGCATCATCTCTCCATCAATCTCTGCAGCCCTG  
AGTTACCCGGGCTGACAGCAAGGAGAGCCGGACCTGCAGGATCGCTTGTGCGAGATGAATGGGCGCTG  
GGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGGCTGCTGCAGGATGCCCTGATGCAGTGCCAGGGT  
TTCCATGAAATGAGCCATGTTTCTTATGCTGGAGAACATTGACAGAAGGAAAAATGAAATTGTCC

Figure 36 part - 100

CTATTGATTCTAACCTTGATGTCAGAGATACTTCAGGACCATCACAACAGCTTATGGTAAGATGTGTGAA  
CTCTGGCAGCCTCCAGTTATTTTAGCAGGGTTGCATTTACATTTACAGAAAATGAATATAAGTGGTAAGT  
GTTGTTTCTTTTAACTTTTGCATTATAGTCTCTACTTTACACTTTTAACTCCCTGTGGTTTC  
CAATCTTTGTAAAGCAAACATGTGCATAGAAGATGATATCTGCTAGCTTTAGAATCTGATTCTAAAGTTG  
TTGCTCAGTTGTAAAAATCTTAGTGTCTCAAGCAATCTTAATTAGCTTGTGTGTTTATTAAGGCAGCT  
TAATTTAACTTCATGTTACATCTATGGCCCAAAGTATATTTGGTGGCTTGTAGTAAAGGTCATTAAA  
ATATTAGAATAGAATGAGACAATTAAGTCTTTTGTGTTGTTTGTGTCGTTGTTTGTGAGACAGATC  
TCAGTCTGTTGCCAGGGTGGAGTGCAGTGGTGCATCTCGGCTCACTGCAATCTCCGCCTCCGGGATTC  
GAGCAATTCTCCTGCCAATTCTCCTGCCTCACCTCCCGAGTAGGTGGGACTACAGGTGTAAGCCACCAC  
GCCTCGCTAATGTTTGTATTTTAGTAGAGACAGGGTTTACCATTGTTGGCCAGGCTGGTCTCGAACTCC  
TGGCCGCGAGGTGATCCACCTGCCTCAGCCTCCCAAAGTCTGGGATTACAGGCATGAGCCACCACACCCA  
GCCGAGTCTTTCAAAGAGGAATTAATACATCAGATTAACATGAACCTGAGCATCAAGTTTTCTGAAAG  
CCAAGACAAAATGGGAAACAAGGAGTAAACTTACTTTTCAATATCTGGCAAAAACAAAACATACCCTTCT  
CAAGGAAGGAGAACTTTTCTAGCACTAAATTCAAGAGGAAATTAAGTGGTAGACTCTTATACAAGGAT  
CTTTGGACAATATAATGTACAGTATATTTAAGTGAATTTATAGAAGATAAGGAAGCATATTTGAGTTCCA  
TTAGAAGAAAATATTATGCACCTTTGTAGCTCTCTGTATTTTAAATGTTATGTCTTAACATTTAAGT  
CACCTAACTACAGAATTTGGTACCTTTTAATTAGTACCATAATAGTCTTAGAAACCTAGAGGAAATAGC  
TGTGGAACCTGATTTTACTTCACTTTGACCTCTGGCATCAAGCTGTGAATGACGAATCACCCCTTTT  
TTTTCAAATCTTGACTAGATATCAGAGGATACCTAGACATACTTCTGCTTCGCTATATTTAATGTTGTGC  
TTTTCTGTTTAAAGATTATCTTACATCTCACTTGCATACTAATCTATATTTAATTACTGTCTATATATA  
CATTAACTAATTTGAACCTTCCAATAATACTGTGGACAGGCATCAAATCAAAGTGAATCAGAGACGGT  
CAGGGGTCTTATAGAATATTTTGGCAGAGGCAGGATTAGAAGTCAAGCCGTGAGCTGCTGCATCCTTTA  
GTGTGTGAGCTCCACGTTTGTAGTGCAGGTATAATTTCCCAAGTTAAGTTGATTGCATTCAGCTT  
TTGGAGCTTTTGCCAATTATCAAAAATGCTTAGAAAAATTAATTTGTTTTGTATGCATAGCAATAAAG  
CATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTTGCAAGACATGTCTTGCCAACCTACTGGTGAATG  
CTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATGTTATTGGAATCGGCTCAAACCTCTCTT  
GAAGGAGGTCAGTCGTATATCAAGGAAGTGGAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGATTTG  
TCTTCTGGTCTTCTGTGATGAAGTGGACACCTCAGGGTCTGTGAGTCCACATCAGGAAGGACACCC  
CAAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCTCTCACAGCCCGGACCTCTGTCTAGCAGTCCACA  
TAGCAGGTCCACAAAAGGTGGCTCCGATTCTCCCTTTCTGAGCCAGGGCCAGGTCCGTCGGGCCGCGC  
TTCCTGTTAGAGTCTCCGAGCAGCTCTTCCCTTCTAGCTTCTCTGCTCCTCCTCATCGGGCTTGCT  
GCCTTGTACCGATGTCAAGGAAGACTACAGCTGTGCTCTCCAACAACCTTTGCCCGGTCTATCCACCC  
CATGCTCAGATACGAAATGGCCCTCCTCCACTGAACTAAGCAGATGCCATCTGCAGAAAGTGGTA  
GCATAAGGAGGATCGGGTCATAAGCAATCCCAAACCTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCC  
TCGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATGTGTGCAAAATATGGCTTCAGAGGTGGAAGATAA  
ACAGTGACGGGGGAACAAACAGACAACAAGAGGTTTGGGAAGAAATCTGGTTTGAGACTCTGAACCTTAG  
CACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCGGACTCATGAATCTGGGCCCTTGCGCCATTCT  
GTGCACAGCCAAAGGACTTCAGTAGACCATCTGGGCAGCTTTCCCATGGTGCTGCTCCAACCATCAGATAA  
ATGACCTTCCCAAGCACCATTGTCAGTGTGTCACATCTACCAACCAACCAAGTGTGCTGAAGAGATTTAGAA  
CCTTGTAACATACAATTTTTAAGAGCTTATATGGCAGCTTCTTTTTTACCTTGTTTTCTTTGGGGCATG  
ATGTTTTAACCTTTGCTTTAGAAAGCAAGCTGTAAATCTAAAAGGCATTTTTTTTAGAGGTATAAAGA  
AAAAGTACAGCTAATAAATAAGATCATGGAAGGCTTTATGTGAAAAAGTTGAATGTTATAGTAAAAAA  
AAAGATATTATGTATGTACAGTTTGCTAAAGCCAAGTTTGTGTTGATTGATTCTTTGCATTTATTAT  
AGATATTATAAAATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SYNE1 mRNA sequence - var5 (public gi: 21734305) (SEQ ID NO: 187)  
CACTGGCAGCAGCGCTCTGCAGACAGCCTGCTTTCTCCACAGCCTTCTCCAATCTCTCCCTCTCGCTCG  
CTCAGCCCCCTCCGGAGCGAGCGGTGAGGACGAGACACCCAGCTAGTGTGGACTCCATCCCCCTGGAGTG  
GGATCACGACTATGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAGGATGAA  
GAAGTCCAGGATGACAAAGATTCTACCTCCGGGGAGCTGTTGCCTTATCAGATGTAATGATCCCCGAGA  
GCCCTGAGGCCATGTATAAACTCACAGAAAATGCAATCAAAAATACCTCCGGGGACACAGTGCCTTAGA  
GTCACAGATCCGACAACCTGGGCAAGCCCTGGATGATAGCCGCTTTCAGATACAGCAAACCGAAAAATATC  
ATTGCGAGCAAACTCCACGGGGCCGGAGCTAGACACCAGCTACAAAGGTACATGAACTGTGGGCG  
AATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAACTGAAGGAGGAAGAGGAGACCTTCC  
TGGCTTTGTTAACTGCTATAGTACCGAAACCAACCGCTGGTGTGATTGACCGATGGGAGCTTCTCCAG  
GCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAACTCAGACT  
TGAACAGCATCTGGGCTGGCTGGGGGACACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGGAACCTCAG  
CACTGACATCCAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACCACCGC  
AAAGCCATCATCTCTCCATCAATCTCTGCAGCCCTGAGTTCAACCCAGGCTGACAGCAAGGAGAGCCGGG  
ACCTGCAGGATCGCTTGTGCGAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCG  
GGGCTGCTGTCAGGATGCCCTGATGCAGTGCCAGGTTTCCATGAAATGAGCCATGGTTTGTCTTATG  
CTGGAGAACATTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAGATACTTC  
AGGACCATCACAACAGCTTATGCAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTT

Figure 36 part - 101



GCAAGACATGTCTTGCCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTC  
CATGTTATTGGAAATCGGCTCAAACCTCTCTTGAAGGAGGTCAGTCGTCATATCAAGGAACTGGAGAAGT  
TATTAGACGTGTCAAGTAGTCAGCAGGATTTGTCTTCTGGTCTTCTGCTGATGAACCTGGACACCTCAGG  
GTCTGTGAGTCCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCTC  
TCACAGCCTGGACCCTCTGTCTCAGCAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCTCTCCCTTT  
CTGAGCCAGGGCCAGGTCCGGCCGGCTTCTGTTCAGAGTCTCCGAGCAGCTCTTCCCTTCA  
GCTTCTCTGCTCTCTCATCGGGCTTGCCCTGCCTTGTACCAATGTCTCAGAGGAAGACTACAGCTGTGCC  
CTCTCCAACAACCTTTGGCCGCTCATTCCACCCCATGCTCAGATACACGAATGGCCCTCTCCACTCTGAA  
CTAAGCAGATGCCATCTGCAGAAGTGTGGTAGCATAAGGAGGATCGGGTCATAAGCAATCCCAAACACTAC  
CAACAAGAGGACCTTGATCTTGGCGAAAGCCATCGGTGTGGCAGCTTTAGCCCTCTCCAGATCACATGT  
GTGCAATTATGGCTTCAAGGTTGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTG  
GAAGAAATCTGGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCCG  
GACTCATGAATTCTGGGCCCTTGGCCATTCTGTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCCAGC  
TTTCCCATGGTGTCTGCCAACCATCAGATAAATGACCCTCCCAAGCACCATGTCTAGTGTCTGTAACATCT  
ACCAACCAACCAGTGTGAAGAGATTTTAGAACCTTGTAAACATACAATTTTTAAGAGCTTATATGGCAGC  
TTCCTTTTACCTTGTCTTCTTTGGGGCATGATGTTTTAACCTTTGCTTTAGAAGCACAAGCTGTAAAT  
CTAAAGGCACCTTTTTTTTAGAGGTATAAGAAAAAACTAGATGTAATAAATAAGATCATGGAAGGCTTTA  
TGTGAAAAAGTTGAATGTTATAGTAAAAAAAAGATATTTATGTATGTACAGTTTGCTAAAGCCAAAG  
TTTTGTTGTATTGATTCTTTGCATTTATTATAGATATTATAAAATAAAAAAAAAAAAAAAAAAAAAA

Human SYNE1 mRNA sequence - var6 (public gi: 21750070) (SEQ ID NO: 188)

TCAGAGGGTGCTCAATGCTTTCCTGAAAGCTTGTGATGAACCTACCGACATCCTTCCAGAGCAGGAGCAG  
CAGGGGCTGCAGGAAGCTGTTTCGAAAGCTCCACAAACAATGGAAGGATCTTCAAGGAGAAGCCCCCTTATC  
ATTTGCTTCACTCTGAAGATTGATGTGGAGAAGAATAGGTTCTTAGCCTCTGCAGAAGAATGCAGAATGA  
GCTGGATCGAGAGACCAAGCTGTATGCCCAAGGAGGAGTGAAGAAGATAATTAAAGAGCACAGGGTTTTC  
TTCAGTGACAAAGGTCTCATCTCTGTGAGAAAAGGTTACAGCTCATCGAGGAACCTCTGTGTGAAC  
TCCCAGTGCAGGACCCAGTAAGGGACACACCTGGAACCTGTCAGTGAATCTCAAGAGCTCAGAGCTGC  
CATTGACAGCACCTACAGGAAGCTCATGGAAGACCCAGACAAGTGAAGGACTACACTAGCAGATTCTCT  
GAGTTCTCATCTTGGATATCTACAAATGAGACACAATTAAGGGGATCAAGGGTGAGGCCATCGATACTG  
CCAACACGGAGAGGTTAAACGTGCGTTGAAGAGATCAGAAATGGTGTACCAAAAGGGGTGAGCCCT  
CAGCTGGCTGAAATCCAGGCTGAAAGTTTGAACAGAAAGTTTCTTGAGAATGAAGCCCAAAGCAGGGA  
GATGAGCTGGCAAAATATCCAGCTCTTCAAGGCTCTTGTGACGCTGCTGTCTCAGAGGTTGAAAAGATGC  
TAAGCAATTTTGGGACTGTGTCCAGTACAAAGAAATAGTCAAAATCTCTCGAAGAATTAATTTCTGG  
CTCTAAAGAAGTCCAGGAACAAGCTGAGAAGATCTTGGATACTGAAAATCTGTTTGAAGCACAGCAGTTA  
CTTCTTCATCACCAGCAAAAGACAAAGCGATCTCAGCAAGAAGAGAGATGTGCAGCAGCAGATCGCGC  
AGGCGCAGCAGGGAGAAGGGGGGCTGCTGACCGAGGCCACGAGGAGCTGCGGAAGCTGGAGAGCACACT  
GGATGGCTTGAGCGCAGCCGGGAGAGGCAGGAACGCCGATCCAGGTACATTAAGAAAATGGGAGCGA  
TTTGAACAAACAAAGAAAACAGTAGTAAGATACCTTTTTTCAACAGGTTCCAGTCAATGAACGCTTCTTGA  
GTTTTCAGCTTTGGAAAGTTTATCTTCAAGAACTGGAACAAACAAAGGAGTTTCTAAACGGACAGAAAG  
TATTGCAGTCCAGGCTGAGAACCCTTGAAGGAAGCTTCAGAGATACCGCTTGGGCCCCAAATAAGCAG  
CTGCTTCAACAGCAGGCCAAGTCAATCAAGAAACAAGTCAAAAAATTAGAAGACACGCTTGAAGAAGAGT  
ATGTGATTGACAAGTCTAACTTTCTTCTCTGAGATAAAGTTTCATACAATCTTCTCTGTACCTTGTAT  
TCAAAACACTCTTAAATCTCAAAGTGTCTGTGTATTTTCAGCATGTTTGAAGGAAACAACCTCACAGTTCA  
AAAGAAAGTATCGCTAATACAGAAACCAATATCTATAACAGAGCCCAAAAAATATAAGGATGTGGGTTT  
TGCATCTTAACTGATCATGTTTCATGAGAAAGCCATATCTATTCTATTCTGTGGCTTTGTACATTGTAG  
AGGGAATCTTGAAGAAAGAACTAATATTTAAATAATTTTTTACTATATTATTCTGCTGTCAACATTTAG  
AGCGAAAAGGAGATATTTGTTAGTGTAGATTCCAGGCCTAAATACACATCACATAGACCATATATCTCC  
AACCTGAAGAAGCTCTGGAGCTTGTTCAGTGCCTCGGTATTCAAGTTATCTGACTAATATGCTCTT  
TCCAGAAATTAACTTTAAATATTTTATTTTTAACTTTTAAATGTTTGTATCTG

Human SYNE1 mRNA sequence - var7 (public gi: 28192521) (SEQ ID NO: 189)

CATATACAGCTTGATAAATCTCTTCTGCACCTCTGGGCACCATAGGTGGCTGTACAGAGCGGAGG  
TGGCCCTGAGAGAGGAAATAACCGTTCAACAGGTCCACGAGGAAACAGCAAACACGATACAAACGGAACCT  
TGAGCAACATAAGAGAAAATGCCGACAATGATGGATCTGCTTCAAAACACGGATGCCACAAAAGAGCA  
TTCCATGAAATCTACCGGACCAGGTCTGTAAACGGGATTCAGTGCCACCTGATCAATTAGAGGACATGG  
CCGAGAGGTTTCAATTTGTTTCCCCACATCAGAGCTACACCTAATGAAAATGGAATTTTTAGAAATAAA  
GTACCGTCTGCTCTCACTGCTGGTTCTTGCAGAGTCAAAGCTGAAGTCTTGGATCATTAAGTACGGGAGG  
AGAGAGTCAGTGGAGCAGCTTCTACAAAACCTACGTGCTTTTATAGAAAATAGCAAGTTCTTTGAACAAT  
ATGAGGTGACATACCAGATCTTGAACAGACAGCTGAGATGTATGTCAAAGCAGATGGTTTCAGTGAAGA  
AGCTGAGAATGTGATGAAATTCATGAATGAACCACCGCTCAGTGGAGGAATCTCTCAGTAGAAGTGAGG  
AGTGTGAGGAGCATGCTGGAAGAAGTGTCTTAACCTGGGATCGCTATGGCAATACAGTGGCTAGTCTGC  
AAGCCTGGCTAGAGGATGCTGAAAAATGCTCAATCAATCAGAAAATGCCAAAAGGATTTTTTTTCGAAA

Figure 36 part - 102

TTTACCTCATTGGATTTCAGCAGCATACTGCCATGAACGATGCTGGCAATTTTCTAATTGAAACCTGTGAT  
GAGATGGTTTTCCCGTGACCTGAAGCAGCAATTACTGTTGCTAAATGGGCGGTGGAGGGAGTTGTTTATGG  
AAGTCAAGCAATATGCTCAAGCTGATGAGATGGACAGAATGAAGAAGGAATACACAGACTGTGTTGTAC  
CCTGTCTGCTTTTGAACGGGAAGCCCAATAAGAACTTTCTGAACCCCTTAGAAGTCTCTTTTATGAATGTC  
AAGCTATTAATTCAAGACTTGGAGGATATTGAGCAGAGGGTGCCTGTGATGGATGCCCCAATACAAGATAA  
TTACAAAGACAGCACACCTCATTACCAAGAAAGCCCCCAAGAAGAAGGAAAAGAAATGTTTGCGACCAT  
GTCAAAGCTCAAAGAGCAGCTAACCAAGGTCAAAGAATGTTACTCCCCACTCCTTTATGAGTCTCAGCAG  
CTGTTGATTCCGTTGGAGGAATTAGAAAAGCAGATGACGTCCTTTTATGACTCACTTGGGAAAATCAATG  
AAATTATCACAGTTCTTGAGCGTGAGGCACAATCGAGTGCCCTTTTAAACAAAAACATCAGG

Human SYNE1 mRNA sequence - var8 (public gi: 19584384) (SEQ ID NO: 190)

AAGCTATTAATTCAAGACTTGGAGGATATTGAGCAGAGGGTGCCTGTGATGGATGCCCCAATACAAGATAA  
TTACAAAGACAGCACACCTCATTACCAAGAAAGCCCCCAAGAAGAAGGAAAAGAAATGTTTGCGACCAT  
GTCAAAGCTCAAAGAGCAGCTAACCAAGGTCAAAGAATGTTACTCCCCACTCCTTTATGAGTCTCAGCAG  
CTGTTGATTCCGTTGGAGGAATTAGAAAAGCAGATGACGTCCTTTTATGACTCACTTGGGAAAATCAATG  
AAATTATCACAGTTCTTGAGCGTGAGGCACAATCGAGTGCCCTTTTAAACAAAAACATCAGGAACTGTT  
AGCTTGTCAAGAAAACCTGTAAGAAAACCTTGACACTTATTGAGAAAAGGCAGTCAAAGTGTTCAAAAGTTT  
GTGACCTTGAGCAACGTGTTAAAGCATTTTGATCAGACGAGGCTACAAAGACAGATTGCAGATATTCAATG  
TTGCTTTTTCAGAGTATGGTAAAGAAAACCTGGAGATTGGAAGAAGCATGTGGAACCAACAGTCGCTTGAT  
GAAGAAGTTTGGAGAGTCTCGAGCAGAGTTGGAGAAGGTACTGCGGATTGCTCAGGAGGGCCTGGAGGAA  
AAGGGGGATCCAGAGGAGTCTCGCGGAGACACACTGAGTCTTTCAGTCACTGAGTCAAGGGTGTCTCA  
ATGCTTTTCTGAAAGCTTGTGATGAACCTCACCGACATCCTTCCAGAGCAGGAGCAGCAGGGGCTGCAGGA  
AGCTGTTTCGAAAGCTCCACAAACATGGAAGGATCTTCAAGGAGAAGCCCTTATCATTGCTTCATCTG  
AAGATTGATGTGGAAGAAGATAGGTTCTTAGCCTCTGTAGAAGAATGCAGAACTGAGCTGGATCGAGAGA  
CCAAGCTGATGCCCCAGGAAGGCAGTGAAAAGATAATTAAAGAGCACAGGGTTTCTTCAGTGACAAAGG  
TCCTCATCATCTCTGTGAGAAAAGGTTACAGCTCATCGAGGAACCTGTGTGAAACTCCAGTGCGGGAC  
CCAGTAAGGGACACACCTGGAACCTGTACGTGACTCTCAAAGAGCTCAGAGCTGCCATTGACAGCACCT  
ACAGGAAGCTCATGGAAGACCCAGACAAGTGAAGGACTACACTAGCAGATTCTCTGAGTTCTCATCTTG  
GATATCTACAAATGAGACACAATTAAAGGGGATCAAGGGTGAGGCCATCGATACTGCCAACCCAGGAGAG  
GTTAAACGTGCGGTTGAAGAGATCAGAAATGGTGTACCAAAAGGGGTGAGACCCTCAGCTGGCTGAAAT  
CCAGGCTGAAAGTTTGAAGAGGTTTCTCTGAGAAATGAAGCCCAAAAGCAGGGAGATGAGCTGGCAAA  
ATTATCCAGCTCTTTCAAGGCTCTGTGACGCTGCTGTGAGAGTTGAAAAGATGCTAAGCAATTTTGGG  
GACTGTGTCCAGTACAAAGAAATAGTCAAAAATTTCTCTGAAGAATTAATTTCTGGCTCTAAGAAGTCC  
AGGAACAAGCTGAGAAGATCTTGATACTGAAATCTGTTTGAAGCACAGCAGTTACTTCTTCATCACCA  
GCAAAAGACAAAGCGGATCTCAGCAAAGAAGAGAGATGTGCAGCAGCAGATCGCGCAGGCGCAGCAGGGA  
GAAGGGGGGCTGCCTGACCGAGGCGCAGGAGCTGCGGAAGCTGGAGAGCACACTGGATGGCTGGAGC  
GCAGCCGGGAGAGGCAGGAACGCCGATCCAGGTCACTTAAGAAAATGGGAGCGATTGAAACAAACAA  
AGAAACAGTAGTAAGATACCTTTTCAAACAGGTTCCAGTCATGAACGCTTCTTGAGTTTTAGCAGTTT  
GAAAGTTTTATCTTCAGAACTGGAAACAAACAAAGGAGTTTCTAAACGGACAGAAAGTATTGCAGTCCAGG  
CTGAGAACCTTGTAAGGAAGCTTCAGAGATACCGCTTGGGCCCCAAAATAAGCAGCTGCTTCAACAGCA  
GGCCAAGTCAATCAAGAACAAGTCAAAAAATTAGAAGACACGCTTGAAGAAGATATTAAACCCCTGGAA  
ATGGTGAACCAAGTGGGATCATTTTGGCAGTAATTTTGAGACTCTGTCCGTCTGGATAACTGAGAAAG  
AAAAAGAACTCAATGCCTTGGAACCTTCGTATCTGCCATGGACATGCAATCAGCCAAATTAAGGTCAC  
AATTCAGGAAATAGAAAGTAAGCTCAGCAGCATTTGAGGATTAGAAGAAGAGCCAGTCTTTTGCTCAG  
TTTGTACCCTGGAGAATCTGCTCGAATTAAGCCAAGTTGACACAAATAAGAAGATACGGGGAAGAGC  
TTCGAGAGCATGCACAGTGTCTGGAAGGAACAATCTCGGGACATTTATCTCAGCAGCAAAAGTTTGAAGA  
GAACCTTAGAAAGATCCAGCAATCTGTGTCTGAATTTGAAGATAAACTTGCTGTTCCAATTAATATATGT  
TCTTCAGCTACAGAAACATACAAAGTTCTTCAAGAACATATGGATCTCTGCCAGGCCCTGGAGTCACTGA  
GCAGCGCATCACTGCCTTCTCAGCCAGTGCCAGGAAGGTTGTGAACAGAGATTCTGTGTTCAGGAGGC  
TGCGGCTCTACAGCAGCAATACGAGGACATCCTAAGGAGGGCGAAGGAGAGACAGACGGCGCTGGAGAAT  
CTGCTGGCCCACTGGCAGAGGCTAGAGAAAGAACTATCATCCTTTTGACCTGGTTAGAGCGGGGTGAAG  
CTAAAGCCAGTTCCCCAGAAATGGACATTTCTGCAGACAGAGTCAAAGTGAAGGTGAACCTTCAGTTAAT  
ACAGGCAAGTTCAAGGAAGTGTGAGGAAGGAAAAATAAAATGCTTTTTTGTACAGTTACATTATTTAA  
ATAATAAAATAAATAAACTTGTAAAAA

Human SYNE1 mRNA sequence - var9 (public gi: 17861377) (SEQ ID NO: 191)

AAGGTAAGCCACTAGAGAGAACTGAAAGAAAACATTCTTAAGATAAATTGAATTGACATTTTCTCTCT  
AAAATATGATTTATAGACCAAGATTAAGATTTCCTGATAATTTGGCTTCATATTATTTTAA  
AGGATTATCAAGAGGAAATTGCTATTGCTCAAGAGAACAAATACAGCTCCAACAAATGGGAGAACGACT  
TGCTAAAGCCAGCCATGAAAGCAAAGCATCTGAGATTGAATACAAGCTGGGAAAGGTCAACGACCGGTGG  
CAGCATCTCTGGACCTCATGTCAGCCAGGTTGAAGAAGCTGAAGGAGACCCTGGTAGCGGTGCAGCAGC  
TTGATAAGAACATGAGCAGCCTGAGGACCTGGCTCGCTCACATCGAGTCAGAGCTGGCCAAGCCAATAGT

Figure 36 part - 103



CTACGATTCTCTGTAACCTCGGAAGAAATACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCAGAGAGACATA  
GAGAAGCACAGTACAGGTGTTGCATCTGTCTCAACCTGTGTGAAGTCTGCTGCACGACTGTGACGCCT  
GTGCCACTGATGCCGAGTGTGACTCTATACAGCAGGCTACGAGAAACCTGGACCGCGGTGGAGAAACAT  
TTGTGCTATGTCCATGGAAGGAGGCTGAAAATCGAAGAGACGTGGCGATTGTGGCAGAAATTTCTGGAT  
GACTATTACGTTTTGAAGATTGGCTGAAGTCTTCAGAAAGGACAGCTGCTTTTCCAGCTCTTCTGGGG  
TGATCTATACAGTTGCCAAGGAAGAACTAAAGAAATTTGAGGCTTTCCAGCGACAGGTCCACGAGTGCCT  
GACGCAGCTGGAACCTGATCAACAAGCAGTACCGCCGCTGGCCAGGGAGAACCAGCTGATTACGATGT  
AGCCTCAAACAGATGGTTACGAAGGCAACCAGAGATGGGACAACCTGCAAAAGCGTGTCACTCCATCT  
TGCGCAGACTCAAGCATTTTATTGGCCAGCGTGAGGAGTTTGAGACTGCGCGGGACAGCATTCTGGTCTG  
GCTCACAGAGATGGATCTGCAGCTCACTAATATTGAACATTTTCTGAGTGTGATGTTCAAGCTAAAATA  
AAGCAACTCAAGGCCTTCCAGCAGGAAATTTCACTGAACCACAATAAGATTGAGCAGATAATTGCCCAAG  
GAGAACAGCTGATAGAAAAGAGTGAGCCCTTGGATGCAGCGATCATCGAGGAGGAAGTAGATGAGCTCCG  
ACGGTACTGCCAGGAGGTCTTCGGGCGTGTGGAAGATACCATAAGAAACTGATCCGCCTGCCTCTCCCA  
GACGATGAGCACGACCTCTCAGACAGGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTCCGACCTGCACT  
GGCACGACCGCTCTGCAGACAGCCTGCTTTCTCCACAGCCTTCCTCCAATCTCTCCCTCTCGCTCGCTCA  
GCCCCCTCCGGAGCGAGCGGTGAGGACGAGACACCCAGCTAGTGTGGACTCCATCCCCCTGGAGTGGGAT  
CACGACTATGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAGGATGAAGAAG  
GTGAGGATGACAAAGATTTCTACCTCCGGGAGCTGTTGCCCTTATCAGATGTAATGATCCCCGAAAGCCC  
TGAGGCCTATGTAAAGACTCACAGAAATGCAATCAAAATACCTCCGGGGACCAAGATGCCCTAGAGTCA  
CAGATCCGACAACCTGGGCAAAGCCCTGGATGATAGCCGCTTTAGATACAGCAAACCGAAAATATCATTC  
GCAGCAAACTCCACGGGGCCGGAGCTAGACACCAGCTACAAAGGCTACATGAAACTGCTGGGCGAATG  
CAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAACCTGAAGGAGGAAGAGGAGAGCCTTCTGGC  
TTTGTAACTGACATAGTACCGAAACCCAAACGGCTGTTGATTGACCGATGGGAGCTTCTCCAGGCC  
AGGCATTGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTAACTCAGACTTGAA  
CAGCATCTGGGCTGCTGGGGACACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGGAACCTCAGCACT  
GACATCCAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACCACCGCAAAG  
CCATCATCCTCTCCATCAATCTCTGCAGCCCTGAGTTCAACCAGGCTGACAGCAAGGAGAGCCGGGACCT  
GCAGGATCGCTTGTGCGAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGC  
CTGCTGCAGGATGCCCTGATGCAGTGCCAGGGTTTCCATGAAATGAGCCATGGTTTGCTTCTTATGCTGG  
AGAACATTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAGATACTTCAGGA  
CCATCACAAACAGCTTATGCAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTTGCAA  
GACATGTCTTGCCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATG  
TTATTGAAATCGGCTCAAACCTTCTTTGAAGGAGGTGAGTCGTATATCAAGGAACTGGAGAAGTTATT  
AGACGTGTCAAGTAGTCAGCAGGATTTGTCTTCTGCTGATGAACTGGACACCTCAGGGTCT  
GTGAGTCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCTCTCAC  
AGCCTGGACCTCTGTGAGCAGTCCACATAGCAGGTCCACAAAGGTGGCTCCGATTCTCTCCCTTTCTGA  
GCCAGGGCCAGGTCCGGTCCGGCCCGGCTTCTGTTGAGAGTCTCCGAGCAGCTCTTCCCTTTAGCTT  
CTCCTGCTCTCTCTCAGCTCGGGCTTGCTTGCCTGTACCAATGTGAGAGGAAGACTACAGCTGTGCCCTCT  
CCAACAACCTTTGCCCGCTCATTCCACCCATGCTCAGATACAGCAATGGCCCTCTCTCCACTCTGAACATA  
GCAGATGCCATCTGCAGAAGTGTGTTAGCATAAGGAGGATCGGGTCATAAGCAATCCCAAACCTACCAAC  
AAGAGGACCTTGATCTTGGCGAAAGCCCTCGGTGTGGCAGCTTTAGCCCTCTCCAGATCACATGTGTGC  
AAATTATGGCTTCAGAGGTGGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTGAAG  
AAATCTGGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCGGACT  
CATGAATTTGGGCCCTTGGGCCATTCTGTGCACAGCCAAAGGACTTCAGTAGACCATCTGGGCAGCTTTC  
CCATGGTGTGCTCCAACCATCAGATAAATGACCCTCCCAAGCACCATGTGAGTGTGCTACAACTACCA  
ACCAACCAGTGTGAAGAGATTTAGAACCTTGTAAACATACAATTTTTAAGAGCTTATATGGCAGCTTCC  
TTTTTACCTTGTTTTCTTTGGGGCATGATGTTTTAACCTTTGCTTTAGAAAGCACAGCTGTAAATCTAA  
AAGGCACCTTTTTTTAGAGGTATAAAGAAAACTAGATGTAATAAATAAGATCATGGAAGGCTTTATGTG  
AAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var10 (public gi: 17861385) (SEQ ID NO: 192)

CAAAAATCAGTCTGATCTCGGGAACCTGGAGAAATTTATTTCTGTACTCTAATGTTCTTTTCAATTTTGG  
TGACCATCAAGGTGCTGGGAGAGGAATTAGATGGCTGTAATTCAAAGTAAATGGAATTAGATGCAGCAGT  
ACAGAAATCTTGGAACAGAAATGGCCAACTGGGTAAGCCACTGGCCAAGAAGATAGGAAAACCTGACTGAA  
CTTCACCGACGACACATTAGACAAGCTGAGAATCGGCTCTCAAGCTCAATCAGGCAACATCACATTTAG  
AAGAATACAATGAAATGCTTGAATTAATTTTGAAGTGGATTGAAAAAGCTAAAGTCTTGGCTCATGGAAC  
TATTGCATGGAATCTGCAAGCCAGCTTCGGAACAATATATTTTGCATCAGACCCTGCTAGAAGAATCC  
AAAGAAATGTCTCAGCAAGTGGCAGAACTGGGACGGGAGACTGAGGAGTTGCGACAGATGATCAAAATTCG  
TTTGCAGAACCTCCAAGATGCAGCTAAGGATATGAAAAATTTGAAGCAGAGTTGAAAAAGTTACAAGCT  
GCCTTGAGACAAGCCAGGCAACACTGACTTCTCCAGAAGTTGGACGTCTCAGTCTCAAGGAGCAGCTCT  
CTCATCGGCAGCATTTGTTGTCTGAGATGGAGTCACTGAAGCCGAAGGTGCAAGCAGTGCAGCTCTGCCA  
GAGTGCCCTCCGGATCCCGAGGATGTGGTTGCCAGCTTACCTCTCTGTCATGCTGCTCTGCGGCTGCAG

Figure 36 part - 104

GAAGAGGCCAGCCGGCTGCAGCACACCGCCATCCAGCAGTGTAACATCATGCAGGAAGCTGTGGTACAAT  
ATGAACAATATGAGCAAGAAATGAAACATCTCCAGCAACTGATAGAAGGAGCTCACAGAGAGATTGAGGA  
TAAACCTGTTGCCACCAGTAACATACAGGAGCTGCAGGCTCAGATTTCTCGGCATGAGGAGCTGGCGCAG  
AAAATTAAGGGCTACCAGGAGCAGATCGCTTCTTTGAATTCCAAGTGCAAGATGCTGACGATGAAAGCCA  
AGCACGCCACCATGCTGCTGACGGTGACCGAGGTGAGGGGCTGGCGGAAGGGACAGAGGACCTGGATGG  
GGAGCTCCTCCCCACGCCCTTCGGCCCCACCCCTCTGTGGTCATGATGACTGCAGGTCGCTGTCACTTTG  
CTGTCAACGGTCACTGAGGAGTCTGGGGAGGAGGGAACCAACAGTGAGATTTCTCTCCACCTGCCTGTC  
GCTCCCCTTACCTGTGGCTAATACAGATGCTTCTGTTAACCAGGACATTGCATATTACCAAGCCTTGTC  
TGCTGAGAGGTTGCAGACAGATGCTGCAAAAATTCACCCAGCACATCCGCATCCAGGAGTTCTATGAA  
CCGGGATTGGAGCCATCCGCTACTGCCAACTGGGTGATTTGCAGCGTCTTGGGAAACCTTAAAGAATG  
TGATCAGTGAGAAGCAGCGCACACTCTATGAAGCTTTGGAGCGCCAGCAGAAGTACCAGGACTCCCTCCA  
GTCCATCTCTACGAAGATGGAGGCCATTGAGCTGAAACTCAGTGAGAGCCCAGAGCCTGGCAGGAGTCCA  
GAAAGCCAGATGGCTGAACATCAGGCATTGATGGATGAGATTCTCATGCTCCAGGATGAAATCAATGAGC  
TCCAGTCCCTCTCTCGCAGAGGAGCTGGTATCCGAGTCTTGTGAGGCCGACCCCTGCGGAGCAGCTGGCCTT  
GCAGTCCACGCTCACTGTCTTAGCCGAGCGAATGTCCACCATCAGGATGAAAGCCTCGGGGAAACGGCAG  
CTTTTGGAGGAGAAGTTGAATGATCAGCTGGAGGAACAAAGGCAGGAACAGGCCCTGCAGAGGTATCGCT  
GTGAAGCCGATGAGCTGGACAGCTGGCTCTTGAGTACCAAGGCCACTCTGGACACTGCGCTGAGTCCACC  
CAAGGAGCCCATGGACATGGAGGCCAGCTTATGGACTGCCAGAATATGCTGGTGGAAATAGAGCAGAAG  
GTGGTGGCTTTATCAGAACTGTGCTCAGTCCACAAATGAGAAGCTGCTGCTGGAGGGCAAAGCTCACACCAAGG  
ACGAGGCCGAGCAGCTGGCTGGAAAGCTGAGAAGGCTCAAGGGGAGCCTGCTGGAGCTGCAGAGAGCCCT  
GCATGATAAGCAGCTCAACATGCAGGGAACAGCACAGGAGAAGGAGGAGAGCGATGTTGACCTAACAGCC  
ACGCAGAGCCCCGGCGTCCAGGAATGGCTGGCCCCAAGCTCGCACCACATGGACCCAGCAGCGGCAGAGCA  
GTCTCCAGCAACAACAAAAGAGTTAGAACAGGAATTAGCCGAGCAGAAGAGTCTCCTTCGCTCAGTAGCCAG  
TCCTGGAGAGGAGATTCTAATTCAACATTCGCGCGGACAGAGACCTCTGGTGATGCTGGCGAAAACCTGAT  
GTGTATATCCAGGAGTTGGGGATGGAAGGGGAGAAATCATCCGCTGAAGACCAGATGAGAATGAAATGGG  
AAAGCCTACATCAAGAAATTTAGTACCAAGCAGAACTACTACAGAATGTTCTGGAACAGGAACAAGAGCA  
AGTGCTTTATAGCAGGCCAAATCGACTCTTGCTGGTGTGCCACTGTACAAAGGGGACGTGCCAACCCAA  
GATAAATCTGCAGTTACATCTTTGCTGGATGGACTGAACCAAGCCTTCGAGGAGGTTTCATCCCAGAGTG  
GAGGGGCAAAGAGGACAGATACACTTGGAGCAGAAGTTGTATGATGGAGTCTCAGCCACCTCTACTTG  
GTTGGATGACGTTGAAGAACGTTTATTTGTTGCCACAGCACTTTTACCAGAAGAAACAGAGACTTGTCTC  
TTCAACCAAGAGATTCTTGCCAAAGACATTAAGGAAATGTCTGAAGAAATGGATAAGAACAACAACTTGT  
TTTCCCAAGCTTTTCCAGAGAATGGTGATAATCGAGATGTTATGAAGATACTTTGGGTTGTCTTTTGGG  
CAGGTTATCCTTGCTAGACTCAGTAGTGAATCAACGATGTCATCAGATGAAAGAAAGACTTCAGCAAATA  
CTAAATTTCCAGAAATGATCTGAAAGTGCTGTTTACATCACTGGCTGACAACAAATACATCATTCTGCAAA  
AACTGGCAAATGTGTTTGAACAGCCCGTAGCAGAAACAAATAGAGGCAATACAACAGGCTGAAGATGGACT  
CAAAGAATTTGATGCAGGAATCATTGAATTAAGAGGCGTGGTGACGAGCTACAGGTGAGCAGCCGTCC  
ATGCAAGAATCTCCAAGCTCCAGGACATGTATGATGAGCTGATGATGATCATTGGCTCCCGGAGGAGTG  
GTCTGAATCAGAACCTTACACTCAAGAGTCAGTATGAGAGGGCCCTACAAGATCTGGCTGACCTGCTAGA  
AACTGGTCAGGAGAAGATGGCAGGAGACCAGAAATCATCGTGTCTTCCAAAGAGGAAATCCAGCAACCA  
CTTGACAAACATAAGGAATACTTTAGGGCCTGGAATCTCATATGATCTTGACTGTAACACTCTTCAGAA  
AGATAATCAGCTTTGCAGTCCAAAGGAAACCCAGTTCATACAGAGCTGATGGCTCAGGCTTCTGCTGT  
ACTGAAACGGGCTCACAAGAGGGGTGTGGAGCTGGAGTACATTCTAGAGACGTGGTCCCATCTGGATGAG  
GACCAGCAGGAGCTCAGCAGACAGCTGGAGGTGGTGAAAGCAGCATCCCAAGCGTGGGTCTGGTGGAGG  
AGAACGAGGACAGGCTTATTGACCGCATAACTCTACCAGCATTTAAATCTAGCCTTAATGAATACCA  
GCCCAAATTATATCAAGTATTAGATGATGGGAAACGACTTCTGATATCCATCAGCTGCTCAGATCTAGAA  
AGCCAACTAAATCAACTTGGAGAGTGCTGGCTAAGTAACACCAATAAAATGTCTAAGGAACCTTCACAGAC  
TGGAAACAATATTGAAACACTGGACCAGATATCAAAGTGAATCTGCAGATCTAATTCAGTGGTTACAATC  
TGCAAAAGACCGGCTAGAATTTTGGACTCAGCAATCTGTGACAGTCCCACAAGAGCTGGAAATGGTCCGT  
GATCATCTAAATGCTTTCTGAGTGTCTTAAAGAAAGTGGATGCCCCAATCTTCCCTGAAATCATCTGTTT  
TGAGTACTGGAAATCAGCTCCTTCGACTAAAAAAGGTGGACACAGCCACGCTGCGCTCTGAGTTGTGCGG  
CATTGATAGCCAGTGGACTGACCTGCTAACCAATATCCAGCCGTCCAGGAGAAGCTCCACCAGCTCCAG  
ATGGATAAATGCCTTCCCGCCATGCCATTTCTGAAGTCATGAGTTGGACTTCTCTAATGGAAATGCTA  
TTCAGAAGGATGAAGATAATATTAATAATTCATAGGTTACAAGGCAATTCATGAATACCTTCAGAAATA  
TAAGGGTTTTAAGATAGACATTAACCTGTAACAGCTGACAGTGGATTTTGTGAACCAAGTCCGTGCTACAA  
ATCAGCAGTCAGGATGTGGAAGTAAGCGTAGTGATAAGACTGATTTTGTGAGCAACTTGGAGCAATGA  
ATAAAAGTTGGCAAATCTGCAAGGTCTAGTAACTGAGAAGATCCAGCTGTTGGAAGGCTTATTGGAATC  
TTGGTCAGAAATATGAAAATAATGTACAATGTCTGAAAACATGGTTTGAACCCAGGAAAAGAGACTAAAA  
CAACAGCATCGAATTGGAGATCAGGCTTCTGTTCAAAATGCACTGAAAGACTGTGAGGATCTGGAAGATC  
TGATTAAGCAAAAAGATAAAGAGTAGAGAAAATTGAGCAGAATGGACTTGTCTTGATTAGACCAAGAA  
AGAAGACGTCTCTAGCATTTGTGAGCACACTCGGAGAGCTCGGCCAAACCTGGGCAAAATTTAGATCAC  
ATGGTTGGACAATTAAGATACTGCTGAAATCAGTGCTTGACCAATGGAGTAGTCACAAAGTGGCCTTTG  
ACAAGATAAACAGTTACCTCATGGAGGCCAGATACTCTTTCCCGATTCCGTCTGCTGACTGGCTCCTT  
AGAAGCTGTGCAAGTTTCAAGGTGACAATCTTCAAGATGATCTGGAAAAACAGGAAAGGAGC

Figure 36 part - 105

TTACAGAAATTTGGCTCTATCACCAACCAATTATTAAAAAGAGTGTACCCACCCGTGACAGAACTCTTA  
CCAATACACTGAAAGAAGTCAACATGAGATGGAATAACTTGCTGGAAGAGATTGCTGAGCAGCTACAGTC  
CAGCAAGGCCCTACTTTCAGCTTTGGCAAAGATACAAGGACTACTCCAAACAGTGTGCTTCGACAGTTTCAG  
CAGCAGGAGGATCGAACCAATGAGCTGTTGAAGGCAGCCACAAACAAGGACATTGCCGATGATGAGGTTG  
CCACATGGATTCAAGATTGCAACGACCTCCTCAAAGGACTGGGCACAGTTAAAGATTCCCTCTTTGTTCT  
CCATGAGCTGGGAGAGCAACTGAAGCAACAAGTGGATGCTTCCGCAGCATCAGCTATTCAATCGGATCAA  
CTCTCTTTGAGTCAACACTTGTGTGCCCTGGAGCAAGCTCTCTGCAAAACAGCAGACTTCATTACAGGCTG  
GAGTTCCTTGATTATGAAACCTTTGCCAAGAGTTTAGAAGCTTTGGAGGCCTGGATAGTGGAAAGCTGAAGA  
AATACTACAAGGGCAGGACCCTAGCCACTCATCTGACCTCTCCACAATCCAGGAAAGGATGGAAGAAGCTT  
AAGGGACAGATGTTAAATTCAGCAGCATGGCTCCAGATTTAGACCGTCTAAATGAGCTTGATATAGGT  
TACCTTGAATGATAAGGAAATCAAAGAATGCAGAATCTGAACCGCCATTGGTCTCTGATCTCCTCTCA  
GACTACAGAAAGATTGAGCAAGTTGCAGTCAATTTTGTCTACAACATCAGACTTTCTTGGAAAAATGTGAA  
ACATGGATGGAATTCCTAGTTCAGACAGAACAAGTTAGCAGTAGAGATTTTCAGGAAATTCAGCACC  
TTTGGAAACAGCAGAGAGCACACGAGTTGTTCAAGCCGAGATGTTGAGTCGTGAGCAGATTTTGCATC  
AATCATTATTGATGGGCAACGTCTTCTAGAACAAAGGTCAAGTTGATGACAGGGATGAATTCACCTGAAA  
TTGACACTCCTCAGTAATCAATGGCAGGGAGTGATTGCGAGGGCCAGCAGAGGCGGGGGATCATTGACA  
GCCAGATTCCGAGTGGCAGCGCTATAGGGAGATGGCAGAAAAGCTTCGTAATGGTTGGTTGAAGTGTCT  
CTACCTCCCCATGAGTGGTCTCGGAAGTGTTCCTATACCCTGCAACAAGCAAGGACCCTCTTTGATGAA  
GTGCAGTTCAAAGAAAAAGTGTTCGTGCGGCAACAAGGCAGCTACATCCTGACTGTGGAGGCTGGCAAGC  
AACTCCTTCTCTCGGCGGACAGTGGCGCTGAGGCCGCTTGCAGGCCGAACTCGCTGAAATCCAAGAGAA  
ATGGAATCAGCCAGCATGCGGCTGGAAGAACAGAAAGAAAACTAGCCTTCTTGTGAAAGACTGGGAA  
AAATGTGAGAAAGGAATAGCAGATTCCCTGGAGAACTACGAACTTTCAAAGAAAGCTTTTCGAGTCTC  
TCCCGTACCCTGAGAGCTCCATGCAGAACAAATGCGTTGCAAGGAATTAGAAAATGCAGTTGGGAG  
CTGGACAGATGACTTGACCCAGTTGAGCCTGCTGAAGGACACCCTCTCTGCCTATATCAGTGTGATGAT  
ATCTCCATTCTTAATGAACGCGTAGAGCTTCTGCAAGGCAGTGGGAAGAACTATGCCACCAGCTCTCCT  
TAAGGCGGCAGCAATAGGTGAAAGATTGAATGAATGGGCAGTCTTCAGTGAAAAGAACAAAGAACTCTG  
TGAGTGGTTGACTCAAATGGAAAGCAAAGTTTCTCAGAATGGAGACATTCTCATTGAAGAAATGATAGAG  
AAGCTGGAAGGAATATCAAGAGGAATTTGCTATTGCTCAAGAGAACAAAATACAGCTCCAACAATGG  
GAGAACGACTTGCTAAAGCCAGCCATGAAAGCAAAGCATCTGAGATTGAATACAAGCTGGGAAAGGTCAA  
CGACCGGTGGCAGCATCTCCTGGACCTCATTGCAGCCAGGGTGAAGAAGCTGAAGGAGACCCTGGTAGCC  
GTGCAGCAGCTTGATAAGAACATGAGCAGCCTGAGGACCTGGCTCGCTCACATCGAGTCAGAGCTGGCCA  
AGCCAATAGTCTACGATTCTGTAACTCGGAAGAAATACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCA  
GAGAGCATAGAGAAGCACAGTACAGGTGTTGCATCTGCTCAACCTGTGTGAAGTCTGTGTCACGAC  
TGTGACGCTGTGCCACTGATGCCGAGTGTGACTCTATACAGCAGGCTACGAGAAACCTGGACCGGCGGT  
GGAGAAACATTTGTGCTATGTCCATGGAAGGAGGCTGAAAATCGAAGAGACGTGGCGATTGTGGCAGAA  
ATTTCTGGATGACTATTACGTTTTGAAAGATTGGCTGAAGTCTTCAGAAAGGACAGCTGCTTTTCCAGC  
TCTTCTGGGGTGATCTATACAGTTGCCAAGGAAGAACTAAAGAAATTTGAGGCTTTTCAGCGACAGGTCC  
ACGAGTGCCTGACCGATGGAAGTGTATCAACAAGCAGTACCGCCGCTGGCCAGGGAGAACCGCACTGA  
TTCAGCATGTAGCCTCAAACAGATGGTTTCACGAAGGCAACCCAGAGATGGGACAACTGCAAAAGCGTGT  
ACCTCCATCTTGCAGACTCAAGCATTTTATTGGCCAGCGTGAGGAGTTTGAGACTGCGCGGGACAGCA  
TTCTGGTCTGGCTCACAGAGATGGATCTGCAGCTCACTAATATTGAACATTTTCTGAGTGTGATGTTCA  
AGCTAAATAAAGCAACTCAAGGCCCTTCAGCAGGAAATTTCACTGAACCAATAAGATTGAGCAGATA  
ATTGCCAAGGAGAACAGCTGATAGAAAAGAGTGAGCCCTTGATGCAGCGATCATCGAGGAGGAAGTAG  
ATGAGCTCCGACGCTAGTCCAGGAGGTCTTCGGGCGTGTGGAAAGATACCATAAGAACTGATCCGCT  
GCCTCTCCAGACGATGAGCAGGACCTCTCAGACAGGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTG  
GACCTGCACTGGCAGACCGCTCTGCAGACAGCCTGCTTCTCCACAGCTTCTCTCAATCTCTCCCTCT  
CGCTCGCTCAGCCCCCTCGGAGCGAGCGGTGAGGACGAGACACCCAGCTAGTGTGGACTCCATCCCCCT  
GGAGTGGGATCAGCACTGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAG  
GATGAAGAAGGTGAGGATGACAAAGATTTCTACCTCGGGAGCTGTTGCCTTATCAGGGGACCAAGTG  
CCCTAGAGTCACAGATCCGACAACTGGGCAAAGCCCTGGATGATAGCCGCTTTTCAGATACAGCAAACCGA  
AAATATCATTGCGAGCAAACTCCACGGGGCCGGAGCTAGACACCAGCTACAAAGGCTACATGAAACTG  
CTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAACTGAAGGAGGAAGAGGAGA  
GCCTTCTGGCTTTGTTAACTGCATAGTACCGAAACCCAAACCGGCTGGTGTGATTGACCGATGGGAGCT  
TCTCCAGGCCCAGGCACTGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAAAC  
TCAGACTTGAACAGCATCTGGCCTGGCTGGGGGACACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGG  
AACTCAGCACTGACATCCAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGA  
CCACCGCAAAGCCATCATCTCTCCATCAATCTCTGACGCCCTGAGTTACCCAGGCTGACAGCAAGGAG  
AGCCGGGACCTGCAGGATCGCTTGTGCGAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGG  
AGTGGCGGGGCTGCTGCGAGATGCCGTGATGCGCAGGTTTCCATGAAATGAGCCATGGTTGTCT  
TCTTATGCTGGAGAACATTGACAGAAGGAAAAATGAAATTTGCTCCCTATTGATTCTAACCTTGATGCAAG  
ATACTTCAGGACCATCACAAACAGCTTATGCAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAG  
CCTCTTTGCAAGACATGCTTGCCTAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGA  
AAAAGTCCATGTTATTGGAATCGGCTCAAACCTCTCTTGAAGGAGGTGAGTCGTATATCAAGGAAGCT

Figure 36 part - 106

GAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGATTTGTCTTCTGGTCTTCTGCTGATGAACTGGACA  
CCTCAGGGTCTGTGAGTCCCACATCAGGAAGGAGCACCCCAACAGACAGAAAACGCCACGAGGCAAGTG  
TAGTCTCTCACAGCTTGGACCTCTGTCTCAGCAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCC  
TCCCTTTCTGAGCCAGGGCCAGGTGGTCCGGCCGCGGCTTCTGTTCAGAGTCTCCGAGCAGCTCTTC  
CCCTTCAGCTTCTCCTGCTCCTCCTCATCGGGCTTGCTGCTTGTACCAATGTCAGAGGAAGACTACAG  
CTGTGCCCTCTCCAACAACCTTTGCCCAGGTCAATCCACCCCATGCTCAGATACACGAATGGCCCTCCTCCA  
CTCTGAACTAAGCAGATGCCATCTGCAGAAGTGTGGTAGCATAAGGAGGATCGGGTCATAAGCAATCCC  
AACTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCCTCGGTGTGGCAGCTTTAGCCCTCCTCCAGAT  
CACATGTGTGCAAAATTATGGCTTCAGAGGTGGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGA  
AGGTTTGAAGAAATCTGGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAG  
TTCCCCGGACTCATGAATCTGGGGCCCTTGGGCCATTCTGTGCACAGCCAAGGACTTCAGTAGACCATCT  
GGGAGCTTTCCCATGGTGCTGCTCCAACCATCAGATAAATGACCTCCCAAGCACCATGTCAGTGTCTGT  
ACAATCTACCAACCAACAGTGTGAAGAGATTTAGAACCTTGTAAACATACAATTTTAAAGAGCTTATA  
TGGCAGCTTCCCTTTTACCTTGTCTTCCCTTGGGGCATGATGTTTAAACCTTTGCTTTAGAAGCACAAGC  
TGTAATCTAAAAGGCACCTTTTTTTTAGAGGTATAAAGAAAACTAGATGTAATAAATAAGATCATGGAA  
GCCTTTATGTGAAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var11 (public gi: 17227153) (SEQ ID NO: 193)

AACTCCTTCTCTCGGCGGACAGTGGCGCTGAGGCCGCTTGACAGGCCGAACCTCGCTGAAATCCAAGAGAA  
ATGGAAATCAGCCAGCATGCGGCTGGAAGAACAGAAAGAAAACTAGCCTTCTTGTGAAAGACTGGGAA  
AAATGTGAGAAAGGAATAGCAGATTCCTTGAGAAACTACGAACCTTCAAAAAGAAAGCTTTCGAGCTC  
TCCCGGATCACCATGAAGAGCTCCATGCAGAACAAATGCGTTGCAAGGAATTAGAAAATGCAGTTGGGAG  
CTGGACAGATGACTTGACCCAGTTGAGCCTGCTGAAGGACACCCTCTCTGCCTATATCAGTGCTGATGAT  
ATCTCCATTCTTAATGAACGCGTAGAGCTTCTGCAAAGGCAGTGGGAAGAACTATGCCACCAGCTCTCCT  
TAAGGCGGCAGCAAAATAGGTGAAAGATTGAATGAATGGGCAGTCTTCACTGAAAAGAACAAAGGAACCTG  
TGAGTGGTTGACTCAAATGGAAGCAAGTTTCTCAGAAATGGAGACATTCTCATTGAAGAAATGATAGAGC  
AAGCTCAAGAAGGATTATCAAGAGGAAATGCTATTGCTCAAGAGAACAAAATACAGCTCCAACAAATGG  
GAGAACGACTTGTAAAGCCAGCCATGAAAGCAAGCATCTGAGATTGAATACAAGCTGGGAAGGTCAA  
CGACCGGTGGCAGCATCTCCTGGACCTCATTGCAGCCAGGGTGAAGAAGCTGAAGGAGACCCTGGTAGCC  
GTGCAGCAGCTTGATAAGAACATGAGCAGCCTGAGGACCTGGCTCGCTCACATCGAGTCAGAGCTGGCCA  
AGCCAATAGTCTACGATTCTGTAACTCGGAAGAACTACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCA  
GAGAGACATAGAGAAGCACAGTACAGGTGTTGCATCTGTCTCAACCTGTGTGAAGTCTGCTGCACGAC  
TGTGACGCCTGTGCCACTGATGCCGAGTGTGACTCTATACAGCAGGCTACGAGAAACCTGGACCGGCGGT  
GGAGAAACATTTGTGCTATGTCCATGGAAAGGAGGCTGAAAATCGAAGAGACGTGGCGATTGTGGCAGAA  
ATTTCTGGATGACTATTACGTTTGAAGATTGGCTGAAGTCTTCAAGAAAGGACAGCTGCTTTTCCAGC  
TCTTCTGGGGTGATCTATACAGTTGCCAAGGAAGAACTAAAGAAATTTGAGGCTTTCAGCAGCAGGTC  
ACGAGTGCCTGACGCAGCTGGAACCTGATCAACAAGCAGTACCGCCGCTGGCCAGGGAGAACCGCACTGA  
TTCAGCATGTAGCCTCAAACAGATGGTTTCAGGAAGGCAACCAGAGATGGGACAACCTGCAAAAGCGTGT  
ACCTCCATCTTGCGCAGACTCAAGCATTTTATTGGCCAGCGTGAGGAGTTTGAGACTGCGCGGGACAGCA  
TTCTGGTCTGGCTCACAGAGATGGATCTGCAGCTCACTAATATTGAACATTTTCTGAGTGTGATGTTCA  
AGCTAAATAAAGCAACTCAAGGCTTCCAGCAGGAATTTCACTGAACCACAATAAGATTGAGCAGATA  
ATTGCCCAAGGAGAACAGCTGATAGAAAAGAGTGAGCCCTTGGATGCAGCGATCATCGAGGAGGAACCTAG  
ATGAGCTCCGACGGTACTGCCAGGAGGTCTTGGGCGTGTGGAAAGATACCATAAGAACTGATCCGCT  
GCCTCTCCAGACGATGAGCAGCAGCTCTCAGACAGGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTCTG  
GACCTGCCTGGCAGCAGCGCTCTGCAGACAGCCTGCTTCTCCACAGCCTTCTCCTCAATCTCTCCCTCT  
CGCTCGCTCAGCCCTCCGGAGCGAGCGGTGAGGACGAGACACCCAGCTAGTGTGGACTCCATCCCCCT  
GGAGTGGGATCAGCACTATGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAG  
GATGAAGAAGGTGAGGATGACAAAGATTTCTACCTCCGGGGAGCTGTTGCCTTATCAGGGGACCACAGTG  
CCCTAGAGTCACAGATCCGACAACCTGGGCAAAGCCCTGGATGATAGCCGCTTTCAGATACAGCAAACCGA  
AAATATCATTCGCAGCAAACTCCACGGGGCCGAGCTAGACACCAGCTACAAAGGCTACATGAAAAGT  
CTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAACCTGAAGGAGGAAGAGGAGA  
GCCTTCTGGCTTTGTAACTGCATAGTACCGAAACCCAAACGGCTGGTGTGATTGACCGATGGGAGCT  
TCTCCAGGCCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAACT  
TCAGACTTGAACAGCATCTGGGCTGGCTGGGGGACAGGAGGAGTTGGAACAGCTCCAGCGTCTGG  
AACTCAGCATCAGATCCAGACCATCGAGCTCCAGATCAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGA  
CCACCGCAAAGCCATCTCTCCATCAATCTCTGCAGCCCTGAGTTCACCCAGGCTGACAGCAAGGAG  
AGCCGGGACCTGCAGGATCGCTTGTGCGAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAG  
AGTGGCGGGGCTGCTGCAGGATGCCCTGATGCAGTGCCAGGGTTTCCATGAAATGAGCCATGGTTTGTCT  
TCTTATGCTGGAGAACATTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAG  
ATACTTCAGGACCATCACAACAGCTTATGCAATAAAGCATGAGCTGTTGGAATCCCACTCAGAGTAG  
CCTCTTGGCAAGACATGCTTGGCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTGAAGCCAAAGA  
AAAAGTCCATGTTATTGGAATCGGCTCAAACCTCTTGAAGGAGGTGAGTCGTCTATATCAAGGAACATG  
GAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGATTTGTCTTCTGGTCTTCTGCTGATGAACTGGACA

Figure 36 part - 107

CCTCAGGGTCTGTGAGTCCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAACGCCACGAGGCAAGTG  
TAGTCTCTCACAGCCTGGACCCCTCTGTTCAGCAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCC  
TCCCTTTCTGAGCCAGGGCCAGGTCCGGTCCGGCCGGCTTCTGTTCAGAGTCCCTCCGAGCAGCTCTTC  
CCCTTCAGCTTCTCTGCTCCTCCTCATCGGGCTTGCTGCTTGTACCAATGTGAGAGGAAGACTACAG  
CTGTGCCCTCTCCAACAACTTTGCCCGGTCACTCCACCCCATGCTCAGATACACGAATGGCCCTCCTCCA  
CTCTGAACATAAGCAGATGCCATCTGCAGAAAGTCTGGTAGCATAGGAGGATCGGGTCATAAGCAATCCC  
AACTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCCTCGGTGTGGCAGCTTTAGCCCTCCTCCAGAT  
CACATGTGTGCAAAATTATGGCTTCAGAGGTGGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGA  
AGGTTTGAAGAAATCTGGTTTGAAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAG  
TTCCCCGGACTCATGAATTCTGGGCCCTTGCCCATTTCTGTGCACAGCCAAGGACTTCAGTAGACCATCT  
GGGCAGCTTTCCCATGGTGCTGCTCCAACCATCAGATAAATGACCCCTCCCAAGCACCATGTGAGTGTCTG  
ACAATCTACCAACCAACAGTGTGAAGAGATTTTAGAACCTTGTAACATACAATTTTAAAGAGCTTATA  
TGGCAGCTTTCTTTTACCTTGTTTTCTTTTGGGGCATGATGTTTTAACCTTTGCTTTAGAAGCACAAAGC  
TGTAATCTAAAGGCATTTTTTTTTAGAGGTATAAAGAAAACTAGATGTAATAAATAAGATCATGGAA  
GGCTTTATGTGAAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var12 (public gi: 16550165) (SEQ ID NO: 194)

ACAAAAGAGCATTCATGAAATCTACCGACCAGGTCTGTTAACGGGATTCCAGTGCCACCTGATCAATT  
AGAGGACATGGCCGAGAGGTTTCATTTTGTTCCTCCACATCAGAGCTACACCTAATGAAAATGGAATTT  
TTAGAATTAAAGTACCGTCTGCTCTCACTGCTGGTTCTTGACAGTCAAAGCTGAAGTCTTGGATCATT  
AGTACGGGAGGAGAGAGTCACTGAGGAGCAGCTTCTACAAAACCTACGTGTCTTTTATAGAAAATGCAAGTT  
CTTTGAACAATATGAGGTGACATACCAGATCTTGAACAGACAGCTGAGATGTATGTCAAAGCAGATGGT  
TCAGTGGAAGAGCTGAGAATGTGATGAAATTCATGAATGAAACCACCGCTCAGTGAGGAATCTCTCAG  
TAGAAGTGAGGAGTGTGAGGAGCATGCTGGAAGAAGTGATCTCTAAGTGGGATCGCTATGGCAATACAGT  
GGCTAGTCTGCAAGCCTGGCTAGAGGATGCTGAAAAATGCTCAATCAATCAGAAAATGCCAAAAGGAT  
TTTTTTCGAAATTTACCTCATTGGATTTCAGCAGCATACTGCCATGAACGATGCTGGCAATTTTCTAATTG  
AAACCTGTGATGAGATGGTTTCCCGTGACCTGAAGCAGCAATTACTGTTGCTAAATGGGCGGTGGAGGGA  
GTTGTTTATGGAAGTCAAGCAATATGCTCAAGCTGATGAGATGGACAGAATGAAGAAGGAATACACAGAC  
TGTGTTGTTACCTGTCTGCTTTTTCGACGGAAGCCCATAGAAACCTTCTGAACCCCTTAGAAGTCTCTT  
TTATGAATGTCAAGCTATTAATTCAAGACTTGGAGGATATTGAGCAGAGGGTGCCTGTGATGGATGCCCA  
ATACAAGATAATTACAAGACAGCACACCTCATTACCAAGAAAGCCCAAGAAGAAGGAAAGAAATG  
TTTGCAGCATGTCAAAGCTCAAAGAGCAGCTAACCAAGGTCAAAGAATGTTACTCCCACTCTCTTATG  
AGTCTCAGCAGCTGTTGATTCCGTTGGAGGAATTAGAAAAGCAGATGACGTCCTTTTATGACTCACTTGG  
GAAAATCAATGAAATTATCACAGTTCTTGAGCGTGAGGCACAATCGAGTGGCCCTTTTTAAACAAAACAT  
CAGGAACCTGTAGCTTGTCAAGAAAACCTGTAAGAAAACCTTGACACTTATTGAGAAAGGCAGTCAAAGTG  
TTCAAAGTTTGTGACCTTGAGCAACGTGTTAAAGCATTTTGATCAGACGAGGCTACAAAGACAGATTGC  
AGATATTATGTTGCTTTTCAGAGTATGGTAAAGAAAACCTGGAGATTGGAAGAAGCATGTGGAAACCAAC  
AGTCGCTTGATGAAGAAGTTTGAGGAGTCTCGAGCAGAGTTGGAGAAGGTAAGTGGGATTGCTCAGGAGG  
GCCTGGAGGAAAAGGGGGATCCAGAGGAGCTCCTCGGAGACACACTGAGTTTTTTCACTCAGCTGGATCA  
GAGGTGCTCAATGCTTTCTGAAAGCTTGTGATGAACCTCACCGACATCCTTCCAGAGCAGGAGCAGCAG  
GGGCTGCAGGAAGCTGTTTCAAGAGCTCCACAAACAATGGAAGGTGAGTCAGGACAGGACGAGACCCGT  
GCATCCTCAATGAAGGAGAGCTTGAGCGTGTAAAGGTCCAAATGTAAGAGAAATTTAGAAATCTCTGG  
AAAGTCACTGTAACCTATTTCGCTCATTTAAAAACTCAAAAACCTGGACTTAAATAAAACCTGATAATATA  
TG

Human SYNE1 mRNA sequence - var13 (public gi: 16553949) (SEQ ID NO: 195)

ATAGTAGAATTATTCTATTATAATTTGGCTTTGACAAAATCAGTCTGATCTCGGGAAACCTGGAGAAA  
TTTATTTTCTGTACTCTAATTTCTTTTCTTTTGGTGACCATCAAGGTGCTGGGAGAGGAATTAGATGGC  
TGTAATTCAAAGTTAATGGAATTAGATGCAGCAGTACAGAAAATCTTGGAACAGAATGGCCAACTGGGTA  
AGCCACTGGCCAAGAAGATAGGAAAACCTGACTGAACCTTACCAGCAGACCATTAGACAAGCTGAGAATCG  
GCTCTCCAAGCTCAATCAGGCAGCATCACATTTAGAAGAATACAATGAAATGCTTGAATTAATTTTGAAG  
TGGATTGAAAAAGCTAAAGTCTTGGCTCATGGAACATTGTCATGGAATTTCTGCAAGCCAGCTTCGGGAAC  
AATATATTTTGCATCAGACCCCTGCTAGAAGAATCCAAAGAAATGACAGTGAGCTGGAAGCAATGACTGA  
GAAATTACAGTACCTCACTAGCGTGTACTGTACAGAAAAAATGTCTCAGCAAGTGGCAGAACTGGGACGG  
GAGACTGAGGAGTTGCGACAGATGATCAAAATTCGTTTGCAGAACCTCAAGATGCAGCTAAGGATATGA  
AAAAATTTGAAGCAGAGTTGAAAAAGTTACAAGCTGCCTTGGAGCAAGCCAGGCAACACTGACTTCTCC  
AGAAGTTGGACGCTCAGTCTCAAGGAGCAGCTCTCTCATCGGCAGCATTTGTTGTCTGAGATGGAGTCA  
CTGAAGCCGAAGGTGCAAGCAGTGCAGCTCTGCCAGAGTGCCCTCCGGATCCCGAGGATGTGGTTGCCA  
GCTTACCTCTCTGTCTGCTCTGCGGCTGCAGGAAGAGGCCAGCCGGCTGCAGCACACCGCCATCCA  
GCAGTGTAAACATCATGCAGGAAGCTGTGGTACAATATGAACAATATGAGCAAGAAATGAAACATCTCCAG  
CAACTGATAGAAGGAGCTCACAGAGAGATTGAGGATAAACCTGTTGCCACCAGTAACATACAGGAGCTGC  
AGGCTCAGATACACGAATGGCCCTCCTCCACTCTGAACCTAAGCAGATGCCATCTGCAGAAGTGCTGGTAG

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CATAAGGAGGATCGGGTCATAAGCAATCCCAAACCTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCCT  
CGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATGTGTGCAAATTATGGCTTCAGAGGTGGAAGATAAA  
CAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTGGGAAGAAATCTGGTTTGGGACTCTGAACCTTAGC  
ACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCGGACTCATGAATTCTGGGCCCTTGGCCCATTCTG  
TGCACAGCCAAGGACTTCAGTAGACCATCTGGGCAGCTTTCCCATGGTGCTGCTCCAACCATCAGATAAA  
TGACCTCCCAAGCACCATGTCTAGTGTCTGTAACATCTACCAACCAACAGTGCTGAAGAGATTTTAGAAC  
CTTTGTAACATACAATTTTAAGAGCTTATATGGCAGCTTCCTTTTACCTTGTTTTCTTTGGGGCATGA  
TGTTTAAACCTTTGGCTTTAGAAGCACAAGCTGTAAATCTAAAAGGCACTTTTTTTTAGAGGTATAAAGAA  
AAACTAGATGTAATAAATAAGATCATGGAAGGCTTTATGTGAAAAAAGTTGAATGTTATAGTAAAAAAA  
AAGATATTTATGTATGTACAGTTTGCTAAAGCCAAGTTTGTGTTGATTGATTTCTTGCATTTATTATA  
GATATTATAAAAT

Human SYNE1 mRNA sequence - var14 (public gi: 12698056) (SEQ ID NO: 196)

ACAACGGAAACTTGAGCAACATAAGGATCTGCTTCAAACACGGATGCCCACAAAGAGCATTCCATGAA  
ATCTACCGGACCAGGTTGTAAACGGGATTCAGTGCCACCTGATCAATTAGAGGACATGGCCGAGAGGT  
TTCATTTTGTTCCTCCACATCAGAGCTACACCTAATGAAAAATGGAATTTTTAGAAATTAAGTACCGTCT  
GCTCTCACTGCTGGTCTTGCAGAGTCAAAGCTGAAGTCTTGGATCATTAGTACGGGAGGAGAGAGTCA  
GTGGAGCAGCTTCTACAAAACCTACGTGTCTTTATAGAAAAATAGCAAGTTCTTTGAACAATATGAGGTGA  
CATACCAGATCTTGAAACAGACAGCTGAGATGTATGTCAAAGCAGATGGTTCACTGGAAGAAGCTGAGAA  
TGTGATGAAATTCATGAATGAAACCCGCTCAGTGGAGGAATCTCTCAGTAGAAGTGAGGAGTGTGAGG  
AGCATGCTGGAAGAAGTGATCTCTAACTGGGATCGCTATGGCAATACAGTGGCTAGTCTGCAAGCTGGC  
TAGAGGATGCTGAAAAATGCTCAATCAATCAGAAAATGCCAAAAAGGATTTTTTTCGAAATTTACCTCA  
TTGGATTACAGCAGCATACTGCCATGAACGATGCTGGCAATTTCTAATTGAAACCTGTGATGAGATGGTT  
TCCCGTGACCTGAAGCAGCAATTACTGTTGCTAAATGGGCGGTGGAGGGAGTTGTTTATGGAAGTCAAGC  
AATATGCTCAAGCTGATGAGATGGACAGAATGAAGAAGGAATACACAGACTGTGTTGTTACCTGTCTGC  
TTTTGCAACGGAAGCCCATAAGAACTTTCTGAACCTTTAGAAGTCTCTTTTATGAATGTCAAGCTATTA  
ATTCAAGACTTGGAGGATATTGAGCAGAGGGTGCCTGTGATGGATGCCCAATACAAGATAATTACAAAGA  
CAGCACACCTCATTACCAAAGAAAGCCCCCAAGAAGAGGAAAAGAAATGTTTGCAGCATGTCAAAGCT  
CAAAGAGCAGCTAACCAAGGTCAAAGAATGTTACTCCCCACTCCTTTATGAGTCTCAGCAGCTGTTGATT  
CCGTTGGAGGAATTAGAAAAGCAGATGACGTCTTTTTATGACTCACTTGGGAAAATCAATGAAATTTATCA  
CAGTTCTTGAGCGTGAGGCACAATCGAGTGCCCTTTTTTAAACAAAAACATCAGGAATGTTAGTGTCA  
AGAAAACCTGTAAGAAAACCTTGACACTTATTGAGAAAAGGCAGTCAAAGTGTTCAAAAGTTTGTGACCTTG  
AGCAACGTGTTAAAGCATTTTGATCAGACGAGGCTACAAAGACAGATTGCAGATATTTCATGTTGCTTTTC  
AGAGTATGGTAAAGAAAACCTGGAGATTGGAAGAAGCATGTGGAACCAACAGTCGCTTGATGAAGAAGTT  
TGAGGAGTCTCGAGCAGAGTTGGAGAAGGTACTGCGGATTGCTCAGGAGGGCCTGGAGGAAAAGGGGGAT  
CCAGAGGAGCTCCTGCGGAGACACACTGAGTTTTCAGTCAGCTGGATCAGAGGGTGCTCAATGCTTTCC  
TGAAAGCTTGATGAACCTACCGACATCCTTCCAGAGCAGGAGCAGCAGGGGCTGCAGGAAGCTGTTCC  
AAAGCTCCACAAACATGGAAGGATCTTCAAGGAGAAGCCCCCTTATCATTGCTTCATCTGAAGATTGAT  
GTGGAGAAGAATAGGTTCTTAGCCTCTGTAGAAGAAATGCAGAACTGAGCTGGATCGAGAGACCAAGCTGA  
TGCCCCAGGAAGGCAGTGAAGAAGATAATTAAAGAGCACAGGGTTTTCTTCAGTGACAAAGGTCTCATCA  
TCTCTGTGAGAAAAGGTTACAGCTCATCGAGGAACCTGTGTGAAACTCCAGTGCGGGACCCAGTAAGG  
GACACACCTGGAACCTGTACGTGACTCTCAAAGAGCTCAGAGCTGCCATTGACAGCACCTACAGGAAGC  
TCATGGAAGACCCAGACAAGTGGAAGGACTACACTAGCAGATTCTCTGAGTTCTCATCTTGATATCTAC  
AAATGAGACACAATTAAGGGGATCAAGGGTGAGGCCATCGATACTGCCAACCACGGAGAGGTTAAACGT  
GCCGTTGAAGAGATCAGAAATGGTGTACCAAAAGGGGTGAGACCTCAGCTGGCTGAAATCCAGGCTGA  
AAGTTTTGACAGAAGTTCTTCTGAGAATGAAGCCCCAAAGCAGGGAGATGAGCTGGCAAATTTATCCAG  
CTCTTCAAGGCTCTTGTGACGCTGCTGTGAGAGGTTGAAAAGATGCTAAGCAATTTTGGGGAAGTGTCT  
CAGTACAAAGAAATAGTCAAAAATCTCTCGAAGAATTAATTTCTGGCTCTAAAGAAGTCCAGGAACAAG  
CTGAGAAGATCTTGGATACTGAAAATCTGTTTGAAGCACAGCAGTTACTTCTTCATCACCAGCAAAAGAC  
AAAGCGGATCTCAGCAAGAAGAGAGATGTGCAGCAGCAGATCGCGCAGGCGCAGCAGGGAGAAGGGGGG  
CTGCCTGACCGAGGCCACGAGGAGCTGCGGAAGCTGGAGAGCACACTGGATGGCTGGAGCGCAGCCGGG  
AGAGGCAGGAACGCCGCATCCAGGTCACATTAAGAAAATGGGAGCGATTTGAAACAAACAAAGAAACAGT  
AGTAAGATACCTTTTTCAACAGGTTCCAGTCATGAACGCTTCTTGAGTTTTAGCAGTTTGGAAAGTTTA  
TCTTCAGAACTGGAACAAACAAAGGAGTTTTCTAAACGGACAGAAAGTATTGCAGTCCAGGCTGAGAACC  
TTGTAAGGAAGCTTCAGAGATACCGCTTGGGCCCCAAATAAGCAGCTGCTTCAACAGCAGGCCAAGTC  
AATCAAAGAACAAGTCAAAAATTTAGAAGACACGCTTGAAGAAGAGTATGTGATTGACAAGTCTTAACT  
TTCTTCTCTGAGATAAAGTTTCATACAATCTTCTGTACCTTGTATTCAAAACACTCTTTTTAAATCTC  
AAAGTGTCTGTGATTTTACGATGTTTGGAGAAACAACCTCACAGTTCAAAGAAAGTATCGCTAATACA  
GAAACCAATATCTATAACAGAGCCCCAAAAATATAAAGGATGTGGGTTTTGCTTAACTGATCATGT  
TCATGAGAAAGCATATCTATTCTATTCTGTGGCCTTTGTACATTGTAGAGGGAATCTTGAAGAAGAACT  
AATATTTAAATAAATTTTTTACTATATTCTCTGCTGTCACCATTTAGAGCGAAAAGGAGATATTTGT  
TAGTGTAGATTCCAGGCCTAAATACACATCACATAGACCATATATCTCAACCTGAAGAAGCTCCTGGAG  
CTGTTTACAGTGCCTCGGTATTCAAGTTATCTGACTAATATGCTCTTCCAGAAATTAACTTTAAAAAT

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ATTTTATTTTAACTTTTAATGTTTGTATCTG

Human SYNE1 mRNA sequence - var15 (public gi: 2895592) (SEQ ID NO: 197)

CAACCTGCATAGTAACGAAACAAACGGCTGGTGTGATTGACCGATGGGAGCTTCTCCAGGCCAGGCAT  
TGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTAACTCAGACTTGAACAGCAT  
CTGGGCTGGCTGGGGGACACGGAGGAGGATTGGAACAGCTCCAGCGTCTGGAACCTCAGCACTGACATC  
CAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACACCGCAAAGCCATCA  
TCCTCTCCATCAATCTCTGCAGCCCTGAGTTCACCCAGGCTGACAGCAAGGAGAGCCGGGACCTGCAGGA  
TCGCTTGTGCGCAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGGCTGCTG  
CAGGATGCCCTGATGCAGTGCCAGGGTTTCCATGAAATGAGCCATGGTTTGTCTTATGCTGGAGAACA  
TTGACAGAAAGGAAAAATGAAATGTGCCCTATTGATTCTAACCTTGATGCAGAGATACTTCAGGACCATCA  
CAAACAGCTTATGCAAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTTGCAAGACATG  
TCTTGCCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATGTTATTG  
GAAATCGGCTCAAACCTTCTCTTGAAGGAGGTGCTGCTCATATCAAGGAAGTGGAGAAGTTATTAGACGT  
GTCAAGTAGTCAGCAGGATTGTCTTCTGCTGCTGATGAACCTGGACACCTCAGGCTCTGTGAGT  
CCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAAACGCCACGAGGCAAGTGTAGTCTCTCAGACCTG  
GACCTCTGTGACAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCTCTCCCTTTCTGAGCCAGG  
GCCAGGTGGTCCGGCCGGCTTCTGTTTCTGACAGTCTCTCCGAGCAGCTCTTCCCTTCTCAGCTCTCTCTG  
CTCTCTCATCGGGCTTGCCTGTACCAATGTCTCAGAGGAAGACTACAGCTGTGCCCTCTCCAACA  
ACTTTGCCCGGTCTATCCACCCCATGCTCAGATACACGAATGGCCCTCTCCACTCTGAACCTAAGCAGATG  
CCATCTGCAGAAAGTGTGGTAGCATAAGGAGGATCGGGTCTAAGCAATCCCAAACCTACCAACAAGAGGA  
CCTTGATCTTGGCGAAAGCCATCGGTGTGGCAGCTTTAGCCCTCTCCAGATCACATGTGTGCAAATTAT  
GGCTTCAGAGGGTGGAAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTGGAAAGAAATCT  
GGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCTCCGACTCATGAA  
TTCTGGGCTTGGCATTCTGTGTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCGAGCTTTCCCTATGGT  
GCTGCTCCAACCATCAGATAAATGACCTCCCAAGCACCATGTCAGTGTCTGACAACTTACCAACCAAC  
CAGTGTGTAAGAGATTTTAGAACCTTGTAAACATACAATTTTAAAGAGCTTATATGGCAGCTTCTTTTAA  
CCTTGTCTTCTTGGGGCATGATGTTTAACTTTTGTCTTAGAAGCACAAGCTGTAAATCTAAAAGGC  
ACTTTTTTTTAGAGGTATAAGAAAACTAGATGTAATAAATAAGATCATGGAAGGCTTTATGTGAAAAAA  
GTTGAATGTTATAGTAAAAA

Human SYNE1 mRNA sequence - var16 (public gi: 6330956) (SEQ ID NO: 198)

CTCGATTGTGCCGTGAGTCTAACACCTGTGCTTGCAAAGGGAAGAGGATCTTCAGAGAACAAGAGATT  
ACCATGACTGTATGAATGTTGTTGAAGTGTTCCTAGAAAAATTTACTACAGAAATGGGATAACTTGGCCAG  
ATCTGATGCAGAGAGTACAGCTGTCCACCTGGAAGCTTTGAAAAAGTTAGCATTGGCATTGCAGGAGAGA  
AAGTATGCTATTGAAGATCTGAAAGATCAAAAGCAGAAAATGATAGAGCATCTGAATTTAGATGACAAGG  
AGTTAGTCAAAGAACAGACGAGTCAATTTAGAGCAACCTTGGTTTTCAGCTTGAGGACCTCATTAAAGGAA  
AATCCAAGTGTGAGTCAACCACTTGGAGGAGTTAAATGTGGTGCAGTCCAGATTTTCAGGAGCTAATGGAG  
TGGGCAGAAGAGCAACAACCAACATCGCCGAGGCGCTTAAGCAGAGCCCTCTCCAGATATGGCTCAGA  
ACCTTCTCATGGATCACTGGCCATCTGCAGTGAAGTGGAGGCCAAGCAGATGCTCCTGAAATCGCTTAT  
AAAGGACGCAGACAGGGTCACTGGCAGATCTTGGTCTCAATGAGCGACAGGTCACTCAGAAAGGCTCTCTCT  
GATGCACAAAGCCACGTGAATTTGTCTCAGTGACTTAGTGGGCCAGCGAAGAAAGTACTTAAACAAAGCCT  
TGTCGAGAAAAACCCAGTTTCTCATGGCAGTGTCCAGGCCACCAGCCAAATTCAGCAACATGAGCGAAA  
GATAATGTTCCGTGAACACATCTGTCTGTACCAGATGATGTGAGCAACAAGTCAAAACATGTAAGAGT  
GCACAAGCCAGCCTCAAGACTTACCAAAATGAAGTCACTGGACTTGGGGCCAGGGTCGCGAACTAATGA  
AGGAAGTCACAGAGCAGGAAAAGAGTGAAGTGTCTGGGAAGCTTCAGGAATTGCAGAGTGTCTATGACAG  
TGTTTACAAAAGTGCAGTCAACGGTTACAAGAACTAGAGAAGAAATTTGGTTTCTAGGAAGCATTTTAAG  
GAAGATTTTGATAAAGCTTGCCTAGGCTAAAACAAGCAGATATTGTTACATTTCTGAAATCAACCTAA  
TGAATGAGAGTACTGAGCTTCATACACAACCTGGCTAAATACCAAAACATTCTTGAACAATCTCCAGAATA  
TGAAAATCTTCTACTTACGCTGCAGAGAACTGGGCAGACCATATTACCATCGCTGAATGAAGTCGATCAT  
TCCTACCTCAGTGAAAAGCTAAATGCTTTGCCCTCGACAATTTAATGTAATGTTGCTTGGCTAAAGACA  
AGTTCTATAAAGTCCAGGAAGCAATTCTTGCTCGGAAGGAATATGCTTCTTGAATGAGTTGACAACCCA  
GTCTCTCAGTGAACCTGAAGCCCAATTCTTGAGGATGAGCAAGTTCCACCGACCTGGCCGTTGAGGAG  
GCTCTTCTCTGCAAGATGGTTGCAGAGCCATTCTGGACGAGGTGGCGGGCTTGGGGAGGCGGTGGATG  
AACTGAACCAGAAAAAAGAGGTTTTCGACGACAGGTGAGCCTTGGCAGCCAGACAAGATGCTGCACCT  
TGTCACCTTATATCACAGGCTGAAGCGACAAACAGAGAGGTTAGCTTATTAGAAGACACCACAGT  
GCTTACCAAGAACACGAGAAGATGTGCCAACAGCTGGAGAGACAACCTGAAGTCTGTAAAAGAGGAGCAGT  
CCAAAGTGAATGAGGAACCGTGCCTGCAGAGGAGAAGCTCAAAATGTATCACTCCCTGGCAGGAAGTCT  
CCAGGACTCAGGGATTGTACTGAAACGAGTAACCATACATCTTGAAGATCTTGGCCACACCTTGACCCC  
TTGGCTTATGAGAAAGCCAGGCATCAGATCCAGTCTTGGCAAGGGGAGTTAAACTGTTGACTTCTGCCA  
TTGGTGAGACGGTGAAGAAATGTGAGAGCCGAATGGTGCAGAGTATAGACTTCCAGACTGAGATGAGTCG  
CTCCCTGGACTGGCTGAGGAGAGTGAAGGCAGAGCTCAGTGGGCCGGTGTACCTAGACCTCAACCTGCAG

Figure 36 part - 110

GACATCCAAGAGGAAATCAGAAAAATCCAAATTCATCAGGAAGAGGTCCAGTCCAGCTTGAGAATCATGA  
 ATGCGCTGAGTCACAAGGAAAAGGAGATTTCACAAAGGCCAAGGAGCTGATTTCTGCGGATTTAGAACA  
 CAGCCTCGCTGAGCTCTCAGAGCTGGATGGAGACATCCAGGAAGCCTTACGCACCAGACAGGCTACCTTG  
 ACTGAAATATATAGCCAGTGTCAAAGGTATTATCAGGTATTTCAAGCAGCCAATGACTGGCTTGAGGATG  
 CCCAAGAAATGTTACAGCTGGCAGGCAATGGCCTAGACGTGGAGAGCGCAGAGGAAAAATCTCAAAAGCCA  
 CATGGAATTTTTCAGTACAGAGGATCAGTTCCATAGTAACCTGGAGGAGCTCCACAGCCTGGTAGCCACC  
 CTGGACCCACTCATCAAGCCAACCGGCAAGAAGACCTAGAACAGAAAGTGGCTTCTCTGGAATCAGGA  
 GCCAGAGGATGAGCCGGGACTCTGTGCCCCAAGTGGATCTCTTGACAGAGATGCACAGCTCAATGGCAGCA  
 TTACCAGAAAGCAAGGGAAGAGGTTATTGAATTGATGAATGATACAGAAAAGAAATGTCTGAGTTTCT  
 TTGTTGAAGACTTCGTCTAGTCATGAAGCGGAAGAAAAATTGTGAGAACACAAGGCTTTAGTGTCTAGTGG  
 TTAATCTTTCCATGAGAAAATTTGTGGCCCTTGAGGAAAAAGCTTCACAATGGAGAAAACCGGAAATGA  
 TGCCAGCAAAGCCACCTGAGCAGGTCAATGACCACCGTCTGGCAGCGCTGGACACGCCTTCGAGCTGTG  
 GCCCAGGACCAGGAGAAGATCCTGGAAGATGCAGTGGATGAGTGGACGGGCTTAAACAACAAGTTAAAA  
 AGGCCACTGAAATGATTGATCAGCTGCAAGATAAGTTACCTGGAAGTTCAGCAGAGAAAGCATCGAAAGC  
 AGAGCTCTTAACTCTTCTTGAATACCACGACACGTTCTGTTCTGGAGCTGGAGCAGCAGCAGTCCGCCTTG  
 GGCATGCTGCGGCAGCAAACCTGAGCATGCTCCAGGATGGAGCCGCCCAACCCCTGGGGAAGAGCCTC  
 CGCTCATGCAGGAAATCACCGCCATGCAAGATCGGTGCTGAAATGCAGGAGAAAGTGAAGACTAATGG  
 AAAGTTGGTGAAGCAAGAGCTGAAGGACCGAGAAATGGTGGAGACTCAGATCAATTTCTGTGAAATGTTGG  
 GTTCAGGAAACGAAAGAATATTTAGGGAATCCAACAATAGAAATAGATGCTCAACTTGAAGAATTCAGA  
 TTCTCTTAACAGAAGCCACAAATCACCAGCAGAACATTGAAAAATGGCAGAGAACAGAGGAGAAGTA  
 CTTAGGTCTTTATACCATATTACCTTCTGAACTCTCCCTTCAGTTGGCTGAAGTGGCGTTAGATCTAAAG  
 ATCCGAGATCAGATCCAAGACAAAATAAAGAAGTTGAGCAGAGCAAGGCCACGAGCCAGGAATCAGCC  
 GGCAAAATTCAGAAAGTTAGCTAAAGACCTCAACAATTTCTAACTGAAGCTGAAAGCAGAGCAGATAATGT  
 AGTTCAAGCTAAAAGTACCAAAAGGTGCTGGGAGAGGAATTAGATGGCTGTAATTCAAAGTTAATGGAA  
 TTAGATGCAGCAGTACAGAAATCTTGGAACAGAAATGGCCAATGGGTAAAGCCACTGGCCAAGAAGATAG  
 GAAACTGACTGAATTTACCAGCAGACCATTAGACAAGCTGAGAATCGGCTCTCCAAGCTCAATCAGGC  
 AGCATCACATTTAGAAGAATACAATGAAATGCTTGAATTAATTTTGAAGTGGATTGAAAAAGCTAAAGTC  
 TTGGCTCATGGAATTTGTCATGGAATTTCTGCAAGCCAGCTTCGGGAACAATATATTTTGCATCAGGTAA  
 CCTTAGGAAAAATAATCTTTAAAAAGTAACCAAGGCAATTTGATTAACTGGGTAGACTGACACAACAC  
 TTAGAGGGCTGTGATGTAAATTTTGGAGCTACCAGATAAAAAAGAAATGCTAAGGTACCCCTAAGTTGTT  
 CAGTAGTTGGACAGAAAGGAGCTTCTCATGAAATTCATGAAATGAAATAAATATCCTTGATCTTC  
 CCTAAACCTACCTTACACCAAGACCCAAACCAATCAGCCTTGTAAGAACTCATTTTCTGTAGCTTCTTTGA  
 AATAATTATCTGCAGGATCTGGTGGGAAATCTTTCTGTGAAGAGATGCAATGAAGTGTGGAAAGATT  
 CTAGACTCCACACTCAGACTGGTGGGAAAACCAACCTCCGCCATGCAGGGCTGTGTGATTGGAGCAGAA  
 TGCTTTGCTCTCTGAATTTCTGCTTCTCATCATTTGTATGAAGACGTAAATAATATTCGTATTTTCAGAC  
 TTATGAGATCAAGTGGTTTAAAGGTACACACGTGCAACGCTCTGCCTGGCAGATGCAGGTGCTCAGTGGGA  
 GATCTCCCGCTCCTCCCTCAGCCCTCACCCAGGCCTGTCTGCGCTTCCACAGGAGGTCCGGGCAGCC  
 CAGAGCAAGCCATGAGTCCACATCACATGCTGGCTATGTTAGTTTCAATTCCTCTGAAGTTACATGAGAAA  
 AATGTTCTTTCTGTCTCAGTCAAGTCACTCCAGGAAATTTTTCATCCTTTTGTAACCTTAAGCTTAAATTA  
 GACACAGATAGTTAATAGGCTAGTTATCATATAATAAATAATAGGGTGACTTTTATAGGAGTTACATGGG  
 TATCGAGTATTCTAGATTTTGTCTCTTATATTATTTATGTATCCTTGTGGCCTTTAAATGAATCCCTGT  
 TTCCATTCTTGTTTACAGGGTTCTAGATCAAAGCCTCATTTTCCATTTTGGAAATGCTTTAACAGCTTC  
 TAATTTTCCCTATATTTACAGTCTTTCTTCTCTGATCAATCTTGGCTATTCTTCCCAATGTCTTTCT  
 TAAGCAACTCCAATCTTTGCTTTAAGATATGCTTAGATATGAACAGACAGGACTTAAGTTACCACTGAT  
 TTGAAAAAATGAAAAAAGCCAACATCCTTAGAAGTCTAGAAATGCAAAATTCAGCAAAAAAAGAGAGG  
 AAGAAAGACAACTTAAGTGTACATTCATCTGTTTCTTTCAAGTTCATATTTAAGGAAGTGAGAGCTC  
 TCAACATTGCTGGTATCCTGGTAAATCTCTTTGAAAAATAATTGGCAAAATGTATGGTGATTGTCAAA  
 AATGTTGCTACTCTGGGCCACGTGCGGTGGCTCACACCTGTAGTCCAGCACTTTGGGAGGCCGAGGTGG  
 GTGGATCAGAGGTCAGGAGTTTGGGACCGGCTTGGCCGGTATGGTGAAGCCCATCTCTACTAGGAGTG  
 CAAAAGTCAGCTGGGCGTGGTGGTGGGCGCTGTAGTCCAGCTACTCGGGAATCTGAGGCGGGAGAATC  
 GCTTGAATCGGGAGGTGGAGGTTGCAGTGAGCCAAGATCATGCCACTGCACTCCAGCCTGGGTGACAGT  
 GAGACTCCATCTC

Human SYNE1 mRNA sequence - var17 (public gi: 20521661) (SEQ ID NO: 199)  
 GTTGGATTTCTCTAATGGAATGTTATTCAGAAGGATGAAGATAATATTAATAAATCCATAGGTTACAA  
 GGCAATTCATGAATACCTTCAGAAATATAAGGGTTTAAAGATAGACATTAAGTGTAAACAGCTGACAGTG  
 GATTTTGTGAACCAAGTCCGTGCTACAAATCAGCAGTCAGGATGTGGAAAGTAAGCGTAGTGATAAGACTG  
 ATTTTGTGAGCAACTTGGAGCAATGAATAAAGTTGGCAAAATCTGCAAGGTCTAGTAACTGAGAAGAT  
 CCAGCTGTTGGAAGGCTTATTGGAATCTTGGTCAAGATATGAAAATAATGTACAAATGTCTGAAAACATGG  
 TTTGAAACCCAGGAAAGAGACTAAACAAACAGCATCGAATTGGAGATCAGGCTTCTGTTCAAAATGCAC  
 TGAAAGACTGTCTGAGATCTGGAAGATTGATTAAAGCAAAAAGAAAAGTAGAGAAAATTGAGCAGAA  
 TGGACTTGCTTTGATTGAGAACAGAAAGAACGCTCTCTAGCATTGTCTGAGCAGCACTGCGAGAGCTC  
 GGCCAAACCTGGGCAAAATTTAGATCATGTTGGACAATTAAGATACTGCTGAAATCAGTGCTTGACC

Figure 36 part - 111



AATGGAGTAGTCACAAAGTGGCCCTTTGACAAGATAAACAGTTACCTCATGGAGGCCAGATACTCTCTTTT  
CCGATCCGTCTGCTGACTGGCTCCTTAGAAGCTGTGCAAGTTCAGGTGGACAATCTTCAGAATCTCCAA  
GATGATCTGGAAAAACAGGAAAGGAGCTTACAGAAATTTGGCTCTATCACCAACCAATTATTAAAAAGAGT  
GTCACCCACCCGTGACAGAACTCTTACCAATACACTGAAAGAAGTCAACATGAGATGGAATAACTTGCT  
GGAAGAGATTGCTGAGCAGCTACAGTCCAGCAAGGCCCTACTTCAGCTTTGGCAAAGATACAAGGACTAC  
TCCAAACAGTGTGCTTCGACAGTTACAGCAGCAGGAGGATCGAACCATGAGCTGTTGAAGGCAGGCCCAA  
ACAAGGACATTGCCGATGATGAGGTTGCCACATGGATTCAAGATTGCAACGACCTCCTCAAAGGACTGGG  
CACAGTTAAAGATTCCCTCTTTGTTCTCCATGAGCTGGGAGAGCAACTGAAGCAACAAGTGGATGCTTCC  
GCAGCATCAGCTATTCACTCGGATCAACTCTCTTTGAGTCAACACTTGTGTGCCCTGGAGCAAGCTCTCT  
GCAAACAGCAGACTTCATTACAGGCTGGAGTTCTTGATTATGAAACCTTTGCCAAGAGTTTAGAAGCTTT  
GGAGGCCTGGATAGTGGAAGCTGAAGAAATACTACAAGGCAGGACCCTAGCCACTCATCTGACCTCTCC  
ACAATCCAGGAAAGGATGGAAGAACTTAAGGGACAGATGTTAAATTCAGCAGCATGGCTCCAGATTAG  
ACCGTCTAAATGAGCTTGGATATAGTGTACCTTTGAATGATAAGGAAATCAAAGAATGCAGAACTTGAA  
CCGCCATTGGTCTCTGATCTCCTCTCAGACTACAGAAAGATTAGCAAGTTGCAGTCATTTTGTCTACAA  
CATCAGACTTTCTTGAAAAATGTGAAACATGGATGGAATTCCTAGTTTACAGACAGAACAAAAGTTAGCAG  
TAGAGATTTACAGAAATTATCAGCACCTTTTGGAACAGCAGAGAGCACACGAGTTGTTTCAAGCCGAGAT  
GTTTCACTCGTCAGCAGATTTTGCACCTCAATCATTATTGATGGGCAACGCTCTCTAGAACAAAGTCAAGTT  
GATGACAGGGATGAATTCACCTGAAATTGACACTCCTCAGTAATCAATGGCAGGGAGTGATTCGCAGGG  
CCCAGCAGAGGCGGGGATCATTGACAGCCAGATTTCGGCAGTGCCAGCGCTATAGGGAGATGGCAGAAAA  
GCTTCGTAAATGGTTGGTTGAAGTGTCTTACCTCCCCATGAGTGGTCTCGGAAGTGTCTCTATACCACTG  
CAACAAGCAAGGACCTCTTTGATGAAGTGCAGTTCAAAGAAAAAGTGTCTTTCGCGCAACAAGGCAGCT  
ACATCCTGACTGTGGAGGCTGGCAAGCAACTCCTTCTCTCGGCGGACAGTGGCGCTGAGGCCGCTTGCA  
GGCCGAACCTCGCTGAAATCCAAGAGAAATGGAATCAGCCAGCATGCGGCTGGAAGAACAGAGAAAAAA  
CTAGACTTTCTTGTGAAAGACTGGGAAAAATGTGAGAAAGGAATAGCAGATTCCCTGGAGAAATCTCGAA  
CTTTCAAAGAAGCTTTTCGAGTCTCTCCCGATCACCATGAAGAGCTCCATGCAGAACAAATGCGTTG  
CAAGGAATTAGAAAAATGCAGTTGGGAGCTGGACAGATGACTTGACCCAGTTGAGCCTGCTGAAGGACACC  
CTCTCTGCCTATATCAGTGCTGATGATATCTCCATTCTTAATGAACGCGTAGAGCTTCTGCAAAGGCAGT  
GGGAAGAACTATGCCACCAGCTCTCCTTAAGGCGGCAGCAATAGGTGAAAGATTGAATGAATGGGCACT  
CTTCAGTGAAAGAACAGGAACCTCTGTGAGTGGTTGACTCAAATGGAAAGCAAAGTTTCTCAGAAATGGA  
GACATTCTCAATTGAAGAAATGATAGAGAAGCTCAAGAAGGATTATCAAGAGGAAATTGCTATTGCTCAAG  
AGAACAAAATACAGCTCCAACAAATGGGAGAACGACTTGCTAAAGCCAGCCATGAAAGCAAAGCATCTGA  
GATTGAATACAGCTGGGAAAGGTCAACGACCGGTGGCAGCATCTCCTGGACCTCATTGCAGCCAGGGTG  
AAGAAGCTGAAGGAGACCCTGGTAGCCGTGCAGCAGCTTGATAAGAATGAGCAGCCTGAGGACCTGGC  
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AAAGCTTAATGCAGCAGCAGGAGCTTCAGAGAGACATGAGAGAAGCAAGTACAGGTGTTGCTCTGCTCCTC  
AACCTGTGTGAAGTCTGCTGCACGACTGTGACGCTGTGCCACTGATGCCGAGTGTGACTCTATACAGC  
AGGCTACGAGAAACCTGGACCGGCGGTGGAGAAACATTTGTGCTATGTCCATGGAAAGGAGGCTGAAAT  
CGAAGAGACGTGGCGATTGTGGCAGAAATTTCTGGATGACTATTACGTTTGAAGATTGGCTGAAGTCT  
TCAGAAAGGACAGCTGCTTTTCCAGCTCTTCTGGGGTATCTATACAGTTGCCAAGGAAGAACTAAAGA  
AATTTGAGGCTTTCCAGCGACAGGTCCACGAGTGCCTGACGCACTGGAAGTGAATCAACAAGCAGTACCG  
CCGCTGGCCAGGAGAAACCGCACTGATTACAGCATGTAGCCTCAAACAGATGGTTACGAAGGCAACCAG  
AGATGGGACAACTGCAAAGCGTGTACCTCCATCTTGCGCAGACTCAAGCATTTTATTGGCCAGCGTG  
AGGAGTTTGAGACTGCGCGGACAGCATTCTGGTCTGGCTCACAGAGATGGATCTGCAGCTCACTAATAT  
TGAACATTTTCTGAGTGTGATGTTCAAGCTAAATAAAGCAACTCAAGGCCCTCCAGCAGGAAATTTCA  
CTGAACCAATAAAGATTGAGCAGATAAATTGCCCAAGGAGAACAGCTGATAGAAAAGAGTGAGCCCTTGG  
ATGCAGCGATCATCGAGGAGGAACTAGATGAGCTCCGACGGTACTGCCAGGAGGTCTTCGGGCGTGTGGA  
AAGATACCAATAAGAACTGATCCGCTGCCTCTCCAGACGATGAGCAGACCTCTCAGACAGGGAGCTG  
GAGCTGGAAGACTCTGCAGCTCTGTGCGACCTGCACTGGCACGACCGCTCTGCAGACAGCCTGCTTTCTC  
CACAGCCTTCTCCAATCTCTCCCTCTCGCTCGCTCAGCCCCCTCCGGAGCGAGCGGTGAGGACGAGACAC  
CCCAGCTAGTGTGGACTCCATCCCCCTGGAGTGGGATCAGCACTATGACCTCAGTCGGGACCTGGAGTCT  
GCAATGTCCAGAGCTCTGCCCTCTGAGGATGAAGAAGGTGAGGATGACAAAGATTTCTACCTCCGGGGAG  
CTGTTGCCCTTATCAGGGGACCACAGTGCCCTAGAGTACAGATCCGACAACTGGGCAAAGCCCTGGATGA  
TAGCCGCTTTCAGATACAGCAAACCGAAAATATCATTCGCAGCAAACTCCCACGGGGCCGGAGCTAGAC  
ACCAGCTACAAAGGCTACATGAACTGCTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGG  
AGCACAACTGAAGGAGGAAGAGGAGAGCCTTCTCGCTTTGTTAACTGCATAGTACCGAAACCCAAAC  
GGCTGGTGTGATTGACCGATGGGAGCTTCTCCAGGCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAG  
AACCTCCAGAAGTGGCAGCAGTTTAACTCAGACTTGAACAGCATCTGGGCTGGCTGGGGGACACGGAGG  
AGGAGTTGGAACAGCTCCAGCGTCTGGAACCTCAGCACTGACATCCAGACCATCGAGCTCCAGATCAAAAA  
GCTCAAGGAGCTCCAGAAAGCTGTGGACCACCGCAAAGCCATCATCTCTCCATCAATCTCTGCAGCCCT  
GAGTTCAACCGAGCTGACAGCAAGGAGAGCCGCTTCTCGCTTTGTTAACTGCATAGTACCGAAACCCAAAC  
GGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGGCTGCTGCAGGATGCCCTGATGCAGTGCCAGGG  
TTTCCATGAAATGAGCCATGGTTTGCTTCTTATGCTGGAGAACATTGACAGAAGGAAAAATGAAATTGTC  
CCTATTGATTCTAACCTTGATGCAGAGATACTTACGACCATCACAACAGCTTATGCAATAAAGCATG

Figure 36 part - 112

AGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTTGCAAGACATGTCTTGCCAACTACTGGTGAATGCTGA  
AGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATGTTATTGGAAATCGGCTCAAACCTTCTCTTGAAG  
GAGGTCAAGTCGTCATATCAAGGAAGTGGAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGATTTGTCTT  
CCTGGTCTTCTGCTGATGAACTGGACACCTCAGGGTCTGTGAGTCCCACATCAGGAAGGAGCACCCTAAA  
CAGACAGAAAAACGCCACGAGGCAAGTGTAGTCTCTCACAGCCTGGACCCTCTGTACAGCAGTCCACATAGC  
AGGTCCACAAAAGGTGGCTCCGATTCTCTCCCTTTCTGAGCCAGGGCCAGGTCCGTCGCGGCCGCGGCTTCC  
TGTTTCAGAGTCTCCGAGCAGCTCTTCCCTTTCAGCTTCTCCTGCTCCTCCTCATCGGGCTTGCTGCTGCT  
TGTACCAATGTCTAGAGGAAGACTACAGCTGTGCCCCTCTCCAACAACCTTTGCCCGGTCAATTCACCCCATG  
CTCAGATACACGAATGGCCCTCTCCACTCTGAACTAAGCAGATGCCATCTGCAGAAGTGTGGTAGCAT  
AAGGAGGATCGGGTCATAAGCAATCCCAAACTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCCTCGG  
TGTGGCAGCTTTAGCCCTCCTCCAGATCACATGTGTGCAAAATATGGCTTCAGAGGTGGAAGATAAACAG  
TGACGGGGGAACAAACAGACAACAAGAGGTTTGGAAAGAAATCTGGTTTGAGACTCTGAACTTTAGCACT  
AAGGAGATTGAGTAAGGACCTCCAAAGTTCCCGGACTCATGAATTCTGGGCCCTTGGGCCATTCTGTGC  
ACAGCCAAGGACTTCAGTAGACCATCTGGGCAGCTTTCCCATGGTGTGCTCCAACCATCAGATAAATGA  
CCCTCCCAAGCACCATGTCAAGTGTCTACAATCTACCAACCAACAGTGCTGAAGAGATTTTAGAACCTT  
GTAACATACAAATTTTAAAGAGCTTATATGGCAGCTTCTTTTACCTTGTCTTGGGGCATGATGT  
TTTAACTTTGCTTTAGAAGCACAAGCTGTAAATCTAAAGGCACCTTTTTTTAGAGGTATAAAGAAAA  
CTAGATGTAATAAATAAGATCATGGAAGGCTTTATGTGAAAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var18 (public gi: 28195688) (SEQ ID NO: 200)

TGTTCTCACGAGGGGGCCAGCTTGGGGCTTGACTGAGCAGGAGCTTCCATGGTCCCACACGTAGTATGAC  
ATGTGACCTCTGCACATTGTTTACAGTTCCTAAACTGTGATTTCTTTTCTGTGAAATAGTTATAATAGT  
AAGTGGCTACCAAGTAGAAAGTGGTCATGGGGGTGAAGGTTAAACACAATAACGGACACACAGAACCTTA  
CACAGGGCATTTTATGCCAAGCTATATTGAATATCTATATCCCTCTACCTGCCCGTCAATGTCTGAATA  
TTGACAATTCACTCTAGACCCTGTCTAGAAGAATCCAAAGAAATTGACAGTGAAGCAATGACTGA  
GAAATTACAGTACCTCACTAGCGTGTACTGTACAGAAAAATGTCTCAGCAAGTGGCAGAAGTGGGACGG  
GAGACTGAGGAGTTGCGACAGATGATCAAAATTCGTTTGCAGAACCTCCAAGATGCAGCTAAGGATATGA  
AAAAATTTGAAGCAGAGTTGAAAAAGTTACAAGCTGCCTTGGAGCAAGCCAGGCAACACTGACTTCTCC  
AGAAGTTGGACGTCTCAGTCTCAAGGAGCAGCTCTCTCATCGGCAGCATTGTGTGTCTGAGATGGAGTCA  
CTGAAGCCGAAGGTGCAAGCAGTGCAGCTCTGCCAGAGTGCCCTCCGGATCCCCGAGGATGTGGTTGCCA  
GCTTACCTCTCTGTCTGCTGCTCTGCGGCTGCAGGAAGAGGCCAGCCGCTGCAGCACACCGCCATCCA  
GCAGTGTAAATCATGTCAGGAAGCTGTGGTACAATATGAACAATATGAGCAAGAAATGAAACATCTCCAG  
CAACTGATAGAAGGAGCTCACAGAGAGATTGAGGATAAACCTGTTGCCACCAGTAACATACAGGAGCTGC  
AGGCTCAGATTTCTCGGCATGAGGAGCTGGCGCAGAAAATTAAGGGCTACCAGGAGCAGATCGCTTCTTT  
GAATTCGAAGTGCAAGATGCTGACGATGAAAGCCAGCAGCAGCCACCATGCTGCTGACGGTGACCGAGGTC  
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AACCAACAGTGAGATTTCTCTCCACCTGCCTGTCTGCTCCCTTCACTGTGGCTAATACAGATGCTTCT  
GTTAACCAAGGACATTGCATATTACCAAGCCTTGTCTGCTGAGAGGTTGCAGACAGATGTGCAAAAATTC  
ACCCAGCACATCCGCATCCAGGAGTTCTATGAACCGGATTTGAGCCATCCGCTACTGCCAACTGGG  
TGATTTGCAGCGTTCTTGGGAAACCTTAAAGAATGTGATCAGTGAGAAGCAGCGCACACTCTATGAAGCT  
TTGGAGCGCCAGCAGAAGTACCAGGACTCCCTCCAGTCCATCTCTACGAAGATGGAGGCCATTGAGCTGA  
AACTCAGTGAGAGCCAGAGCCTGGCAGGAGTCCAGAAAGCCAGATGGCTGAACATCAGGCATTGATGGA  
TGAGATTCTCATGCTCCAGGATGAAATCAATGAGCTCCAGTCCCTCTCTCGCAGAGGAGCTGGTATCCGAG  
TCTTGTGAGGCCCGACCTTGCAGGAGCAGCTGGCTTGCAGTCCACGCTCACTGTCTTAGCCGAGCGAATGT  
CCACCATCAGGATGAAAGCCTCGGGGAAACGGCAGCTTTTGGAGGAGAAGTTGAATGATCAGCTGGAGGA  
ACAAAGGCAGGAACAGGCCCTGCAGAGGTATCGCTGTGAAGCCGATGAGCTGGACAGCTGGCTCTTGAGT  
ACCAAGGCCACTCTGGACACTGCGCTGAGTCCACCAAGGAGCCATGGACATGGAGGCCAGCTTATGG  
ACTGCCAGAATATGCTGGTGGAAATAGAGCAGAAGGTGGTGGCTTTATCAGAACTGTGAGTCCACAATGA  
GAACCTGCTGCTGGAGGGCAAGCTCACACCAAGGACGAGCCGAGCAGCTGGCTGGAAAGCTGAGAAGG  
CTCAAGGGGAGCCTGCTGGAGCTGCAGAGAGCCCTGCATGATAAGCAGCTCAACATGCAGGGAACAGCAC  
AGGAGAAGGAGGAGAGCGATGTTGACCTAACAGCCACGCAGAGCCCCGGCGTCCAGGAATGGCTGGCCCCA  
AGCTCGCACCACATGGACCCAGCAGCGGCAGAGCAGTCTCCAGCAACAAAAAGAGTTAGAACAGGAATTA  
GCCGAGCAGAAGAGTCTCCTTCGCTCAGTAGCCAGTCTGTGGAGAGGAGATTCTAATTC AACATTTCGGCGG  
CAGAGACCTCTGTTGATGCTGGCGAAAAACCTGATGTGTTATCCAGGAGTTGGGGATGGAAGGGGAGAA  
ATCATCCGCTGAAGACAGATGAGAATGAAATGGGAAGAAAGCTTACATCAAGAATTTAGTACCAAGCAGAAA  
CTACTACAGAATGTTCTGGAACAGGAACAAGAGCAAGTGCTTTATAGCAGGCCAAATCGACTCTTGTCTG  
GTGTGCCACTGTACAAAGGGGACGTGCCAACCCAGATAAATCTGCAGTTACATCTTTGCTGGATGGACT  
GAACCAAGCCTTCGAGGAGGTTTATCCAGAGTGGAGGGGCAAGAGGCAGAGTATACACTTGGAGCAG  
AAGTTGATGATGGAGTCTCAGCCACCTCTACTTGGTTGGATGACGTTGAAGAACGTTTATTTGTTGCCA  
CAGCACTTTTACCAGAAGAAACAGAGACTTGTCTCTTCAACCAAGAGATTCTTGCCAAAGACATTAAGGA  
AATGTCTGAAGAAATGGATAAGAACA AAAA ACTTGTCTTCCCAAGCTTTTCCAGAGAATGGTGATAATCGA  
GATGTTATTGAAGATACTTTGGGTTGTCTTTGGGCAGGTTATCCTTGCTAGACTCAGTAGTGAATCAAC

Figure 36 part - 113

GATGTCATCAGATGAAAGAAAGACTTCAGCAAATACTAAATTTCCAGAATGATCTGAAAGTGCTGTTTAC  
ATCACTGGCTGACAAACAAATACATCATTCTGCAAAAACCTGGCAAATGTGTTTGAACAGCCCGTAGCAGAA  
CAAATAGAGGCAATACAAACAGGCTGAAGATGGACTCAAAGAATTTGATGCAGGAATCATTGAATTAAAGA  
GGCGTGGTGACGAGCTACAGGTCGAGCAGCCGTCCATGCAAGAACTCTCCAAGCTCCAGGACATGTATGA  
TGAGCTGATGATGATCATTGGCTCCCGGAGGAGTGGTCTGAATCAGAACCTTACACTCAAGAGTCAGTAT  
GAGAGGGCCCTACAAGATCTGGCTGACCTGCTAGAACTGGTCAGGAGAAGATGGCAGGAGACCAGAAAA  
TCATCGTGTCTTCCAAAGAGGAAATCCAGCAACCACTTGACAAACATAAGGAATACCTTCAGGGCCTGGA  
ATCTCATATGATCTTGACTGTAACACTCTTCAGAAAGATAATCAGCTTTGCAGTCCAAAAGGAAACCCAG  
TTCCATACAGAGCTGATGGCTCAGGCTTCTGCTGTACTGAAACGGGCTCACAAGAGGGGTGTGGAGCTGG  
AGTACATTCTAGAGACGTGGTCCCATCTGGATGAGGACCAGCAGGAGCTCAGCAGACAGCTGGAGGTGGT  
GGAAGCAGCATCCCAAGCGTGGGTCTGGTGGAGGAGAACGAGGACAGGCTTATTGACCGCATAACACTC  
TACCAGCAATTTAAATCTAGCCTTAATGAATACCAGCCCAAATTATATCAAGTATTAGATGATGGGAAC  
GACTTCTGATATCCATCGCTGCTCAGATCTAGAAAGCCAACTAAATCAACTTGGAGAGTGCTGGCTAAG  
TAACACCAATAAAATGTCTAAGGAACCTTCACAGACTGGAAACAATATTGAAACACTGGACCAGATATCAA  
AGTGAATCTGCAGATCTAATTCAGTGGTTACAATCTGCAAAAGACCGGCTAGAATTTTGGACTCAGCAAT  
CTGTGACAGTCCCACAAGAGCTGGAAATGGTCCGTGATCATCTAAATGCTTTCTGGAGTTTCTAAAGA  
AGTGGATGCCAATCTTCCCTGAAATCATCTGTTCTGAGTACTGGAAATCAGCTCCTTCGACTAAAAAAG  
GTGGACACAGCCACGCTGCGCTCTGAGTTGTGCGCATTGATAGCCAGTGGACTGACCTGCTAACCATA  
TCCAGCCGCTCCAGGAGAAGCTCCACCAGCTCCAGATGGATAAACTGCCTTCCCGCCATGCCATTTCTGA  
AGTCATGAGTTGGACTTCTCTAATGGAAATGCTATTGAGAAGGATGAAGATAATATTAAAAATTCCATA  
GGTTACAAGGCAATTCATGAATACCTTCAGAAATATAAGGGTTTAAAGATAGACATTAAGTGTAAACAGC  
TGACAGTGGATTTTGTGAACCAAGTCCGTGCTACAAATCAGCAGTCAAGATGTGGAAAGTAAGCGTAGTGA  
TAAGACTGATTTTGTGAGCAACTTGGAGCAATGAATAAAGTTGGCAAATTTCTGCAAGGTCTAGTAAGT  
GAGAAGATCCAGCTTGTGGAAGGCTTATGGAAATCTTGGTCAAGATATGAAAATAATGTACAATGTCTGA  
AAACATGGTTTGAACCCAGGAAAAGAGACTAAAAACAACAGCATCGAATTGGAGATCAGGCTTCTGTTCA  
AAATGCACTGAAAGACTGTGAGGATCTGGAAGATCTGATTAAAGCAAAAGATAAAGAAGTAGAGAAAATT  
GAGCAGAATGGACTTGCTTTGATTGAGACCAAGAAAGAAGACGTCTCTAGCATTGTCTGAGCACACTGC  
GAGAGCTCGGCCAAACCTGGGCAAATTTAGATCAGATGGTTGGACAATTAAAGATACTGCTGAAATCAGT  
GCTTTGACCAATGGAGTAGTACAAAGTGGCCTTTGACAAGATAAAGCAGTTACCTCATGGAGGCCAGATAC  
TCTCTTTCCGATTCGGTCTGCTGACTGGCTCCTTAGAAGCTGTGCAAGTTTCAAGGTGGACAATCTTCAGA  
ATCTCAAGATGATCTGGAAAAACAGGAAAGGAGCTTACAGAAATTTGGCTCTATCACCACCAATATTATT  
AAAAGAGTGTACCCACCCGTGACAGAACTCTTACCAATACACTGAAAGAAGTCAACATGAGATGGAAT  
AAGTGTCTGGAAGAGATTGCTGAGCAGCTACAGTCCAGCAAGGCCCTACTTCAGCTTTGGCAAGAGTTTA  
AGGACTACTCCAAACAGTGTGCTTCGACAGTTGAGCAGCAGGAGGATCGAACCAATGAGCTGTTGAAGGC  
AGCCACAAACAAGGACATTGCCGATGATGAGGTTGCCACATGGATTCAAGATTGCAACGACCTCCTCAA  
GGACTGGGCACAGTTAAAGATTCCCTCTTTGTTCTCCATGAGCTGGGAGAGCAACTGAAGCAACAAGTGG  
ATGCTTCCGAGCATCAGCTATTCAATCGGATCAACTCTCTTTGAGTCAACACTTGTGTGCCCTGGAGCA  
AGCTCTCTGCAACAGCAGACTTTCATTACAGGCTGGAGTTCTTGATTATGAAACCTTTGCCAAGAGTTTA  
GAAGCTTTGGAGGCCCTGGATAGTGGAAGCTGAAGAAATACTACAAGGGCAGGACCCCTAGCCACTCATCTG  
ACCTCTCCACAATCCAGGAAAGGATGGAAGAACTTAAGGGACAGATGTTAAAATTTCAGCAGCATGGCTCC  
AGATTAGACCGCTCTAAATGAGCTTGGATATAGGTTACCCTTGAATGATAAGGAAATCAAAAGAATGCAG  
AATCTGAACCGCCATTGGTCTCTGATCTCCTCTCAGACTACAGAAAGATTTCAGCAAGTTGCAGTCATTTT  
TGCTACAACATCAGACTTCTTGGAAAAATGTGAAACATGGATGGAATTCCTAGTTTCAGACAGAAACAAA  
GTTAGCAGTAGAGATTTTCAGGAAATTATCAGCACCTTTTGGAAACAGCAGAGAGCACACGAGTTGTTTTCA  
GCCGAGATGTTTCAGTCGTGAGCAGATTTTGCACCTCAATCATTATTGATGGGCAACGTCTTCTAGAACAAG  
GTCAAGTTGATGACAGGGATGAATTCAACCTGAAATTGACACTCCTCAGTAATCAATGGCAGGGAGTGAT  
TCGCAGGGCCCAGCAGAGGCGGGGGATCATTGACAGCCAGATTCCGCCAGTGGCAGCGCTATAGGGAGATG  
GCAGAAAAGCTTCGTAATGGTTGGTTGAAGTGTCTACCTCCCATGAGTGGTCTCGGAAGTGTTCCTA  
TACCACTGCAACAAGCAAGGACCTCTTTGATGAAGTGACAGTTCAAAGAAAAAGTGTTCCTGCGGCAACA  
AGGCAGCTACATCTGACTGTGGAGGCTGGCAAGCAACTCCTTCTCTCGGCGGACAGTGGCGCTGAGGCC  
GCCTTGACAGGCCGAACCTCGCTGAAATCCAAGAGAAATGGAAATCAGCCAGCATGCGGCTGGAAGAACAGA  
AGAAAAAAGTAGCCTTCTTGTGTAAGACTGGGAAAAATGTGAGAAAGGAATAGCAGATTCCCTGGAGAA  
ACTACGAACCTTTCAAAAAGAAAGCTTTTCGAGTCTCTCCCGGATCACCATGAAGAGCTCCATGCAGAACAA  
ATGCGTTGCAAGGAATTAGAAAAATGCAGTTGGGAGCTGGACAGATGACTTGACCCAGTTGAGCCTGTCTGA  
AGGACACCTCTCTGCCTATATCAGTGCTGATGATATCTCCATTCTTAATGAACGCGTAGAGCTTCTGCA  
AAGGCAGTGGGAAGAACTATGCCACCAGCTCTCCTTAAGGCGGCAGCAAATAGGTGAAAGATTGAATGAA  
TGGGCAGTCTTCAGTGAAAGAAACAAGGAACCTCTGTGAGTGGTTGACTCAAATGGAAGCAAAGTTTCTC  
AGAATGGAGACATTCTCATTGAAGAAATGATAGAGAAGCTCAAGAAGGATTATCAAGAGGAAATTTGCTAT  
TGCTCAAGAGAACAAATACAGCTCCAACAAATGGGAGAACGACTTGCTAAAGCCAGCCATGAAAGCAAA  
GCATCTGAGATTGAATACAAGCTGGGAAAGGTCAACGACCGGTGGCAGCATCTCCTGGACCTCATTGCAG  
CCAGGTTGAAGAAGCTGAAGGAGACCCTGGTAGCCGTGCAGCAGCTTGATAAGAACATGAGCAGCCTGAG  
GACCTGGCTCGCTCAGATCGAGTCAGAGCTGGCCAAAGCCAATAGTCTACGATTCTGTAACTCGGAAGAA  
ATACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCAGAGAGACATAGAGAAGCACAGTACAGGTGTTGCAT

Figure 36 part - 114

CTGTCTCAACCTGTGTGAAGTCCTGCTGCACGACTGTGACGCTGTGCCACTGATGCCGAGTGTGACTC  
TATACAGCAGGCTACGAGAAACCTGGACCGGCGGTGGAGAAACATTTGTGCTATGTCCATGGAAAGGAGG  
CTGAAATCGAAGAGACGTGGCGATTGTGGCAGAAATTTCTGGATGACTATTCACGTTTTGAAGATTGGC  
TGAAGTCTTCAGAAAGGACAGCTGCTTTTCCAGCTCTTCTGGGGTGATCTATACAGTTGCCAAGGAAGA  
ACTAAAGAAATTTGAGGCTTTCCAGCGACAGGTCCACGAGTGCCTGACGCAGCTGGAAGTATCAACAAG  
CAGTACCGCCGCTGGCCAGGGAGAACCGCACTGATTGAGCATGTAGCCTCAAACAGATGGTTTACGGAAG  
GCAACCAGAGATGGGACAACCTGCAAAAGCGTGTACCTCCATCTTGGCGAGACTCAAGCATTTTATTGG  
CCAGCGTGAGGAGTTTGAGACTGCGCGGGACAGCATTCTGGTCTGAGATGAGATGATCTGCAGCTC  
ACTAATATTGAACATTTTTCTGAGTGTGATGTTCAAGCTAAATAAAGCAACTCAAGGCCTTCCAGCAGG  
AAATTTCACTGAACCACAATAAGATTGAGCAGATAATTGCCAAGGAGAACAGCTGATAGAAAAGAGTGA  
GCCCTTGGATGCAGCGATCATCGAGGAGGAAGTAGATGAGCTCCGACGGTACTGCCAGGAGGTCTTCGGG  
CGTGTGGAAAGATACCATAAGAACTGATCCGCTGCCTCTCCAGACGATGAGCAGACCTCTCAGACA  
GGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTGCGGACCTGCACTGGCAGCAGCCGCTCTGCAGACAGCCT  
GCTTTCTCCACAGCCTTCTCCAATCTCTCCCTCTCGCTCGCTCAGCCCTCCGGAGCGAGCGGTACAGGA  
CGAGACACCCAGCTAGTGTGGACTCCATCCCCCTGGAGTGGGATCAGACTATGACCTCAGTCGGGACC  
TGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAGGATGAAGAAGGTGAGGATGACAAAGATTTCTACCT  
CCGGGGAGCTGTTGCCTTATCAGGGGACCACAGTGCCCTAGAGTCACAGATCCGACAACCTGGGCAAGCC  
CTGGATGATAGCCGCTTTCAGATACAGCAAAACCGAAAATATCATTTCGAGCAAACTCCACGGGGCCGG  
AGCTAGACACCGCTACAAAGGCTACATGAAACTGCTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAA  
GAGACTGGAGCACAACTGAAGGAGGAAGAGGAGAGCCTTCTGGCTTTGTTAACCTGCATAGTACCGAA  
ACCCAAACGGCTGCTGTGATTGACCGATGGGAGCTTCTCCAGGCCAGGCATTGAGCAAGGAGTTGAGGA  
TGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAACTCAGACTTGAACAGCATCTGGGCCTGGCTGGGGGA  
CACGGAGGAGGATTGGAACAGCTCCAGCTGTGAACTCAGCACTGACATCCAGACCATCGAGCTCCAG  
ATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACCACCGCAAAGCCATCATCTCTCCATCAATCTCT  
GCAGCCCTGAGTTCAACCAGGCTGACAGCAAGGAGAGCCGGGACCTGCAGGATCGCTTGTGCGAGATGAA  
TGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGGCTGCTGCAGGATGCCCTGATGCAG  
TGCCAGGGTTTCCATGAAATGAGCCATGGTTTGTCTTCTATGCTGGAGAACATTGACAGAAGGAAAAATG  
AAATGTCCCTATTGATTCTAACCTTGATGCAGAGATACTTCAGGACCATCACAAACAGCTTATGCAAAAT  
AAAGCATGAGCTTGTGGAATCCCAACTCAGAGTAGCCTCTTTGCAAGACATGTCTTGCCAACCTACTGGTG  
AATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATGTTATTGGAAATCGGCTCAAACCTC  
TCTTGAAGGAGGTGAGTCGTATCAAGGAACCTGGAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGA  
TTTGTCTTCTGCTCTTCTGCTGATGAACTGGACACCTCAGGGTCTGTGAGTCCCACATCAGGAAGGAGC  
ACCCAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCTCTCACAGCCTGGACCCTCTGTGCAGAGTC  
CACATAGCAGGTCCACAAAAGGTGGCTCCGATTCTCCCTTCTGAGCCAGGGCCAGGTCCGGTCCGGCCG  
CGGCTTCTGTTTCAGAGTCTCTCCGAGCAGCTCTTCCCTTCAGCTTCTCTGCTCCTCCTCATCGGGCTT  
GCCTGCCTTGTACCAATGTGAGAGGAAGACTACAGCTGTGCCCTCTCCAACAACCTTGCCCGGTCAATCC  
ACCCCATGCTCAGATACAGCAATGGCCCTCCTCCACTCTGAACTAAGCAGATGCCATCTGCAGAAGTGCT  
GGTAGCATAAGGAGGATCGGGTCATAAGCAATCCCAACTACCAACAAGAGGACCTTGATCTTGGCGAAA  
GCCCTCGGTGTGGCAGCTTTAGCCCTCCTCCAGATCAGATGTGTGCAAAATTATGGCTTCAGAGGTGGAAG  
ATAAACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTGAAGAAATCTGGTTTGAGACTCTGAACC  
TAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCGGACTCATGAATTCTGGGCCCTTGGCCCA  
TTCTGTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCAGCTTTCCCATGGTGTCTCTCAACCATCAG  
ATAAATGACCTCCCAAGCACCATGTGAGTGTGTAACAATCTACCAACCAACAGTGTGAAGAGATTTT  
AGAACTTGTAACTATCAATTTTAAAGAGCTTATATGGCAGCTTCTTTTTTACCTTGTTTTTCTTTGGGG  
CATGATGTTTTAACCTTTGCTTTAGAAGCACAAGCTGTAAATCTAAAAGGCACCTTTTTTTTAGAGGTATA  
AAGAAAACTAGATGTAATAAATAAGATCATGGAAGGCTTATGTGAAAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var19 (public gi: 28195676) (SEQ ID NO: 201)

CAAGGGGAAACTTTCATCCCCACGCAGGTTATAGCTTTTGTCTCTGCAGAGTCTAACTTTTGCAAGTGGA  
AGCTTCATGGTGGTGGCGGAGGACCTGAGTGCCCTGAGGATGGCAGAGGACGGCTGTGTGGATGCAGATC  
TCCAGATTGTAAGTGGGATGTACAAAGGGCCAGGGTGAAGAAGCTGAAGGAGACCTGGTAGCCGTGCA  
GCAGCTTGATAAGAATGAGCAGCCTGAGGACCTGGCTCGCTCACATCGAGTCAGAGCTGGCCAAGCCA  
ATAGTCTACGATTCTGTAACTCGGAAGAAATACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCAGAGAG  
ACATAGAGAAGCACAGTACAGGTGTTGCATCTGTCTCAACCTGTGTGAAGTCTGTCTGCACGACTGTGA  
CGCCTGTGCCACTGATGCCGAGTGTGACTCTATACAGCAGGCTACGAGAAACCTGGACCGGCGGTGGAGA  
AACATTTGTGCTATGTCTCATGGAAAGGAGGCTGAAAATCGAAGAGACGTGGCGATTGTGGCAGAAATTT  
TGGATGACTATTACGTTTTGAAGATTGGCTGAAGTCTTCAGAAAGGACAGCTGCTTTTCCAGCTCTTC  
TGGGGTGATCTATACAGTTGCCAAGGAAGAACTAAAGAAATTTGAGGCTTTCCAGCGACAGGTCCACGAG  
TGCCTGACGCAGCTGGAAGTATCAACAAGCAGTACCGCCGCTGGCCAGGGAGAACCGCACTGATTTCAG  
CATGTAGCTCAAACAGATGGTTTACGAAGGCAACAGAGATGGGACAACCTGCAAAAGCGTGTACCTC  
CATCTTGGCAGACTCAAGCATTTTATTTGGCCAGCGTGAGGAGTTTGAAGTGTGAGACTGCGCGGGACAGCATCTG  
GTCTGGCTCACAGAGATGGATCTGCAGCTCACTAATATTGAACATTTTTCTGAGTGTGATGTTCAAGCTA  
AAATAAAGCAACTCAAGGCCTTCCAGCAGGAAATTTCACTGAACCACAATAAGATTGAGCAGATAATTGC

Figure 36 part - 115

CCAAGGAGAACAGCTGATAGAAAAGAGTGAGCCCTTGGATGCGAGCGATCATCGAGGAGGAACTAGATGAG  
CTCCGACGGTACTGCCAGGAGGTCTTCGGGCGTGTGGAAAGATACCATAAGAACTGATCCGCTGCCTC  
TCCCAGACGATGAGCAGACGACCTCTCAGACAGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTGGACCT  
GCACTGGCACGACCGCTCTGCAGACAGCCTGCTTTCTCCACAGCCTTCTTCCAATCTCTCCCTCTCGCTC  
GCTCAGCCCCCTCCGGAGCGAGCGGTGAGGACGAGACACCCAGCTAGTGTGGACTCCATCCCCCTGGAGT  
GGGATCACGACTATGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAGGATGA  
AGAAGGTCAGGATGACAAAGATTTCTACCTCCGGGGAGCTGTTGCCTTATCAGATGTAATGATCCCCGAA  
AGCCCTGAGGCTATGTAAACTCACAGAAAATGCAATCAAAAATACCTCCGGGGACACAGTGCCTTAG  
AGTCACAGATCCGACAACTGGGCAAAGCCCTGGATGATAGCCGCTTTAGATACAGCAAACCGAAAATAT  
CATTCGCAGCAAACTCCCACGGGGCCGGAGCTAGACACCAGCTACAAAGGCTACATGAAACTGCTGGGC  
GAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAACTGAAGGAGGAAGAGGAGAGCCTTC  
CTGGCTTTGTTAACTGCATAGTACCGAAACCCAAACGGCTGGTGTGATTGACCGATGGGAGCTTCTCCA  
GGCCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAACTCAGAC  
TTGAACAGCATCTGGGCTGGCTGGGGACACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGGAACCTCA  
GCACTGACATCCAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACCACCG  
CAAAGCCATCATCTCTCCATCAATCTCTGCAGCCCTGAGTTTACCCAGGCTGACAGCAAGGAGAGCCGG  
GACCTGCAGGATCGCTTGTGCGAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGC  
GGGGCCTGCTGCAGGATGCCCTGATGCAGTGCAGGTTTCCATGAAATGAGCCATGGTTTGCTTCTTAT  
GCTGGAGAACATTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAGATACTT  
CAGGACCATCAAAAAGCTTATGCAAATAAAGCATGAGCTGTTGGAATCCCACTCAGAGTAGCCTCTT  
TGCAAGACATGCTTGGCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGT  
CCATGTTATTGGAATCGGCTCAACTTCTCTTGAAGGAGGTGAGTCGTATATCAAGGAAGTGGAGAAG  
TTATTAGACGTGTCAAGTAGTCAGCAGGATTTCTTCTTCTGCTGATGAAGTGGACACCTCAG  
GGTCTGTGAGTCCACATCAGGAAGGAGCACCCCAACAGACAGAAAAACGCCACGAGGCAAGTGTAGTCT  
CTCACAGCCTGGACCTCTGTGAGCAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCTCCCTT  
TCTGAGCCAGGGCCAGGTCCGTCCGCGCGGCTTCTGTTAGAGTCTCCGAGCAGCTCTTCCCTTTC  
AGCTTCTCCTGCTCCTCCTCATCGGCTTGCCTGCCTTGTACCAATGTGAGAGGAAGACTACAGCTGTGC  
CCTCTCAACAACTTTGCCCCGTCACTCCACCCATGCTCAGATACACGAATGGCCCTCCTCCACTCTGA  
ACTAAGCAGATGCCATCTGCAGAAAGTGTGCTGGTAGCATAGGAGGATCGGGTCAATAGCAATCCCAACTA  
CCAACAAGAGGACCTTGATCTTGGCGAAAGCCCTCGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATG  
TGTGCAAATTATGGCTTCAGAGGTGAAGATAAAGCATGACGGGGGAACAAACAGACAACAAGAAGTTT  
GGAAGAAATCTGGTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCC  
GGACTCATGAATTCTGGGCCCTTGGCCATTCTGTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCG  
CTTTCCCATGGTGTGCTCCAACCATCAGATAAATGACCTCCCAAGCACCATGTAGTGTCTGACAAATC  
TACCAACCAACCACTGCTGAAGAGATTTAGAACCTTGTAACATACAATTTTAAAGAGCTTATATGGCAG  
CTTCTTTTTTACCTTGTCTTCTTGGGGCATGATGTTTAACTTTGCTTTAGAAGCACAAGCTGTAAA  
TCTAAAAGGCACCTTTTTTTTAGAGGTATAAAGAAAACTAGATGTAATAAATAAGATCATGGAAGGCTT  
ATGTGAAAAAGTTGAATGTTATAGT

Human SYNE1 Protein sequence - var1 (public gi: 21753085) (SEQ ID NO: 295)  
MVDLDFEDMKDGVKLLALLEVLSGQKLPCEQGRMRKRIHAVANIGTALKFLEGRKIKLVNINSTDIDAG  
RPSIVLGLMWITIIYFQIEELTSNLPQLQSLSSASSVDSIVSSETSPSPSKRKVTTKIQGNAKKALLKW  
VQYTAGKQTGIEVKDFGKSWRSVAFHSHVIAIRPELVLETVKGRSNRENLEDAFTIAETELGIPRLLD  
PEDVDVDKPDKESIMTYVAQFLKHYPIHNASTDGQEDDEILPGFPSPFANSVQNFKREDRVIKEMKVI  
EQFERDLTRAQMVESNLQDKYQSFKHFRVQYEMKRKQIEHLIQPLHRDGLSLDQALVKQSWDRVTSRLF  
DWHIQLDKSLPAPLGTIGAWLYRAEVALREEITVQVHEETANTIQRKLEQHKDLLQNTDAHKRAFHEIY  
RTRSVNGIPVPPDQLEDMAERFHFVSSTSELHLMKMEFLELKYRLLSLLVLAESKLKSWIIKYGRRESVE  
QLLQNYVSFIENSKFFEYEVYQILKQTAEMYVKADGSVEEAENVMKFMNETTAQWRNLSVEVRSVRSM  
LEEVI SNWDYRGNTVASLQAWLEDAEKMLNQSENAKDFFRNLPHWIQQHTAMNDAGNFIETCDEMVS  
DLKQQLLLNLRWRELMEVKQYQAQADEMDRMKEYTDCVVTLSAFATEAHKKLSEPLEVFSFMVVKLLIQ  
DLEDIEQRVPVMDAQYKIITKTAHLITKESP

Human SYNE1 Protein sequence - var2 (public gi: 19584385) (SEQ ID NO: 296)  
KLLIQDLEDIEQRVPVMDAQYKIITKTAHLITKESPQEEGKEMFATMSKLKEQLTKVKECYSPLLYESQ  
LLIPLLEELEKQMTSFYDSLKINEIITVLEREAQSSALFKQKHQELLACQENCKTLTLIEKGSQSVQKF  
VTLNVLKHFQDTRLQRQIADIHVAFQSMVKKTDGDKHGVETNSRLMKKFESRAELEKVLRIAQEGLEE  
KGDPEELLRRHTEFFSQLDQRLVNAFLKACDELTDILPEQEQQGLQEAVRKLHKQWKDLQGEAPYHLHL  
KIDVEKNRFLASVEECRTELDRETKLMPQEGSEKI KEHRVFFSDKGPHELLCEKRLQIEELCVKLPVRD  
PVRDTPGTCHVTLELRAAIDSTYRKLMDPPDKWKDYTSRPFSEFSSWISTNETQLKGIGKEAIDTANHGE  
VKRAVEEIRNGVTKRGETLSWLKSRKLVLETVSSSENAEQKQDELAKLSSSFKALVTLSEVEKMLSNFG  
DCVQYKEIVKNSLEELISGSKEVQEAKEKILDENLFEAQQLLLHHQKTKRISAKKRDVQQQIAQAQQG  
EGGLPDRGHEELRKLESTLDGLERSRERQERRIQVTLRKWERFETNKETVVRVYLFQTGSSHERFLSFSS

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ESLSSELEQTKEFSKRTESIAVQAENLVKEASEIPLGPQNKQLLQQQAKSIKEQVKKLEDITLEEDIKPMPE  
MVKTKWDHFGNSFETLSVWITEKEKELNALETSSAMDMQISQIKVTIQEIESKLSSIVGLEEEAQSFAQ  
FVTTGESARIKAKLTQIRRYGEELREHAQCLEGTILGHLSQQQKFEENLRKIQQSVSEFEDKLAVPIKIC  
SSATETYKVLQEHMDLCOALESLSAITAFSASARKVVRDSCVQEAALQQQYEDILRRAKEROTALEN  
LLAHWQRLEKELSSFLTWERGEAKASSPEMDISADRVKVEGELQLIQASSRKCEEGKNKMLFVTVTLFK  
IIK

Human SYNE1 Protein sequence - var3 (public gi: 17861378) (SEQ ID NO: 297)  
MGERLAKASHESKASEIEYKLGKVNDRWQHLLDLIAARVKKLKETLVAVQQOLDKNMSSLRTWLAHIESEL  
AKPIVYDSCNSEEIQRKLNQEQELQORDIEKHSTGVASVLNLCEVLLHDCDACATDAECDISIQQATRNLDL  
RWRNICAMSMERRLKIEETWRWLQKFLDDYSRFEDWLKSSERTAAFPSSSGVIYTVAKEELKKFEAFQORQ  
VHECLTQLELQYRRLARENRTDSACSLKQMVHEGNQRWDNLQKRVTSILRLRLKHFQIGQREEFETARD  
SILVWLTEMDLQLTNIEHFSECDVQAKIKQLKAFQOEISLNHNKIEQIIAQGEOLIEKSEPLDAAIEEE  
LDELRRYQCQEVFGRVERYHKKLIRLPLPDDHDLSDRELELEDSDAALSDDLHWHDRSADSLSPQPSNLS  
LSLAQPLRSERSGRDTPASVDSIPLEWDHDDYDLSDLESAMSRALPSEDEEGQDDKDFYLRGAVALSDVM  
IPESPEAYVKLTENAIKNTSGDHSALQSIRQLGKALDDSRFQIQQTENIIRSKTPTGPELDSYKGYMK  
LLGECSSSIDSVKRLHKLKEEESLPGFVNLHSTETQTAGVIDRWELLQAQALSKELRMKQNLQKQWQF  
NSDLNSIWAWLGDTEEELEQLQRLSTDIQTIELQIKKLKELQKAVDHRKAIILSINLCSPEFTQADSK  
ESRDLQDRLSQMNGRWDRVCSLLEEWGRLLQDALMQCGFHEMSHGLLLMLNIDRRKNEIVPIDSNLDA  
EILQDHHKQLMQIKHELLESQLRVASLQDMSCQLLVNAEGTDCLEAKEKVHVIGNRLKLLKEVSRHIKE  
LEKLDVSSSQQDLSSWSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQPGSPVSSPHSRSTKGGSD  
SSLSEPGPRSGRGFLFRVLRAALPLQLLLLLLIGLACLVPMSEEDYSCALSNFARSFHPMLRYTNGPP  
PL

Human SYNE1 Protein sequence - var4 (public gi: 17861386) (SEQ ID NO: 298)  
MELDAAVQKFLEQNGQLGKPLAKKIGKLTTELHQQTIRQAENRLSKLNQATSHLEEYNEMLELILKWIKA  
KVLAHGTIAWNSASQLRKQYILHQTLLLEESKEIDSLEAMTEKLQYLTSVYCTEKMSQQVAELGRETEEL  
RQMIKIRLQNLQDAADMMKKFEAEKLLQAALQAQATLTSPEVGRSLKEQLSHRQHLLSEMESLKPQV  
QAVQLCQSALRIPEDVVASLPLCHAALRLQEEASRLQHTAIQQCNIMQEAHVQYEQYEQEMKHLQQLIEG  
AHREIEDKPVATSNIQELQAQISRHEELAQKIKGYQEIQASLNSKCKMLTMKAKHATMLLTVEVEGLAE  
GTEDLDGELLPTPSAHSVVMTAGRCHTLLSPVTEESGEGTNSEISSPPACRSPSPVANTDASVNQDI  
AYYQALSAERLQTDAAKIHPTSAQSEFYEPGLEPSATAKLGDLSQSWETLKNVISEKQRTLYEALERQQ  
KYQDSLQSIKMEAIKLSSESPEPGRSPESQMAEHQALMDEILMLQDEINELQSSLAEEVLSESCAD  
PAEQALQSTLTVLAERMSTIRMKASGKRQLLEEKLNQLEEQRQEQALQRYCEADELDSWLLSTKATL  
DTALSPPKEPMDMEAQLMDCQNLVIEQKVVALSELVHNENLLLEGKAHTKDEAEQLAGKLRLKGS  
LELQRALHDKQLNMQGTAQEKEESDVLDTATQSPGVQEWLAQARTTWTQQRQSSLQOQKELEQELAEQKS  
LLRSVASRGEELIQHSAAETSGDAGEKPDVLSQELGMEGEKSSAEDQMRMKWESLHQEFSTKQKLLQNV  
LEQEQEQVLYSRPNRLLSGVPLYKGDVPTQDKSAVTSLLDGLNQAFEEVSSQSGAKRQSIHLEQKLYDG  
VSATSTWLDVDEERLFAVATALLPEETETCLFNQEIILAKDIKEMSEEMDKNKNLFSQAFPENGDNRVIED  
TLGCLLGRSLSLDSVNVQRCHQMKERLQQILNFQNDLKVLFSTLADNKYIILQKLANVFEQPVAEQIEAI  
QQAEDGLKEFDAGIIEKLRGDELQVEQPSMQELSKLQDMYDELMMIIGSRRSGLNQNLTLKSQYERLQ  
DLADLLETGQEKEMAGDQKIIVSSKEEIQOPLDKHKEYFQGLESHMILTUTLFRKIIISFAVQKETQFHTL  
MAQASAVLKRAHKGVELEYILETWSHLDEDQQLSRQLEVVESSIPSVGLVEENEDRLIDRITLYQHLK  
SSLNEYQPKLYQVLDGKRLIISISCSDESQNLQLEGWLSNTNKMSELHRLLETILKHWTRYQSESAD  
LIHWLQSAKDRLEFWTQQSVTPQELMVRDHLNAFLFSKEVDAQSSSLKSSVLSTGNQLLRLKQVDTAT  
LRSELSRIDSQWTDLLTNPVAVQEKHLQMDKLPKRHAISEVMWSLTMENAIQKDEDNIKNSIGYKAI  
HEYLQKYKGFIDINCKQLTVDFVNQSVLQISSQDVESKRSDKTDFAEQLGAMNKSQWILQGLVTEKIQ  
LEGLLESWSEYENNVQCLKTWFETQEKRLKQHRIGDQASVQNALKDCQDLEDLIKAKDKEVEKIEQNG  
ALIQTKKEDVSSIVMSTLRELQGTWANLDHVMGQLKILKSVLDQWSSHQVAFDKINSYLMEARYSLSRF  
RLLTGSLEAVQVQVNDLQNLQDDLEKQERSLQKFGSITNQLLKECHPPVTELTNTLKEVNMNRWNNLLEE  
IAEQLOSSKALLQLWQRYKDYSKQCASTVQQQEDRTNELLKAATNKDIADDEVATWIQDCNDLLKGLGT  
KDSLFVLHELGEQLKQVVDASAASAIQSDQLSLSQHLCALEQALCKQQTSLQAGVLDYETFAKSLEALEA  
WIVEAEELQGGDPSSHSSDLSTIQERMEELKGQMLKFSSMAPDLRLNELGYRLPLNDKEIKRMQNLNRH  
WSLISSQTTTERFSKLQSFLLQHTFLEKCEWMEFLVQTEQKLAVEISGNYQHLLLEQQRALHLEFQAEFMS  
RQQLIHSIIIDGQRLLEQGGVDDRDEFNLKLTLLSNQWQGVIRRAQQRRIIDSQIRQWQRYREMAEKL  
KWLVEVSYLPMGLSGSVPIPLQARTLFDEVQFKEKVFLRQQGSYILTVEAGKQLLLSADSGAEALQAE  
LAEIQEKWKSASMRLEEQKKLAFLLKDWKCEKGIADSLKRLTFKKKLSQSLPDHHEELHAEQMRCKE  
LENAVGSWTDDLTQLSLLKOTLSAYISADDISILNERVELLQQRQWELCHQLSLRRQQIGERLNEWAVFS  
EKNKELCEWLTQMESKVSQNGDILIEEMIEKLKDYQEEIAIAQENKIQLOQMGERLAKASHESKASEIE  
YKLGKVNDRWQHLLDLIAARVKKLKETLVAVQQOLDKNMSSLRTWLAHIESELAKPIVYDSCNSEEIQRK  
LNQEQELQORDIEKHSTGVASVLNLCEVLLHDCDACATDAECDISIQQATRNLDLRRWRNICAMSMERRLKIE  
ETWRWLQKFLDDYSRFEDWLKSSERTAAFPSSSGVIYTVAKEELKKFEAFQORQVHECLTQLELQYRRL

Figure 36 part - 117



ARENRTDSACSLKQMVHEGNQRWDNLQKRVTSLRRLKHFIFIGOREEFETARDSILVWLTEM DLQLTNIEH  
FSECDVQAKIKQLKAFQOEISLNHNKIEQIIAQGEQLIEKSEPLDAAIEEELDELRRYCQEVFGRVERY  
HKKLIRLPLPDDEHDLSDRELELEDSAAALSDHLHWDHRSADSLSPQSSNLSLSLAQPLRSERSGRDTPA  
SVDSIPLWDHHDYDLSDRLESAMSRALPSEDEEGQDDKDFYLRGAVALSGDHSALSAESQIRQLGKALDDSR  
FQIQQTENIIRSKTPTGPELDTSYKGYMKLLGECSSSIDSVKRLKHEKLEEEESLPGFVNLHSTETQTAG  
VIDRWELLQAQALSKELRMKQNLQKWQQFNSDLNSIWAWLGDTEEELEQLQRLELSTDIQTIELQIKKLK  
ELQKAVDHRKAIILSINLCSPEFTQADSKESRDLQDRLSQMNGRWDRVCSLLEEWGRLLQDALMQCQGFH  
EMSHGLLLMLLENIDRRKNEIVPIDSNLDAEILQDHHKQLMQIKHELLESQLRVASLQDMSCQLLVNAEGT  
DCLEAKEKVHVIGNRLKLLKEVSRHIKELEKLLDVSSSQDLSSWSSADELDTSGSVSPSTSGRSTPNRQ  
KTPRGKCSLSQPGPSVSSPHSRSTKGGSDSSLEPGPGRSGRGFLFRVLRAALPLQLLLLLLIGLACLVP  
MSEEDYSCALSNNFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var5 (public gi: 17227154) (SEQ ID NO: 299)

MRLEEQKKKLAFLLKDWKCEKGIADSLKLRFTFKKLSQSLPDHHEELHAEQMRCKELENAVGSWTDDL  
TQLSLLKDTLSAYISADDISILNERVELLQROWEELCHQLSLRRQQIGERLNEWAVFSEKNKELCEWLTQ  
MESKVSQNGDILIEEMIEKLLKDYQEEIAIAQENKIQLOQMGERLAKASHESKASEIEYKLGKVNDRWQH  
LLDLIAARVKKLKETLVAVQQLDKNMSSLRTWLAHIESELAKPIVYDSCNSEEIQRKLENEQQLORDIEK  
HSTGVASVLNLCEVLLHDCDACATDAECDSIQQATRNLDRRWRNICAMSMERRLKIETWRLWQKFLDDY  
SRFEDWLKSSERTAAFPSSSGVIYTVAKEELKKFEAFQROVHECLTQLELINKQYRRLARENRTDSACSL  
KQMVHEGNQRWDNLQKRVTSLRRLKHFIFIGOREEFETARDSILVWLTEM DLQLTNIEHFSECDVQAKIKQ  
LKAQOEISLNHNKIEQIIAQGEQLIEKSEPLDAAIEEELDELRRYCQEVFGRVERYHKKLIRLPLPD  
EHDLSRELELEDSAAALSDHLHWDHRSADSLSPQSSNLSLSLAQPLRSERSGRDTPASVDSIPLWDH  
YDLSDRLESAMSRALPSEDEEGQDDKDFYLRGAVALSGDHSALSAESQIRQLGKALDDSRFQIQQTENIIR  
KTPTGPELDTSYKGYMKLLGECSSSIDSVKRLKHEKLEEEESLPGFVNLHSTETQTAGVIDRWELLQAQ  
LSKELRMKQNLQKWQQFNSDLNSIWAWLGDTEEELEQLQRLELSTDIQTIELQIKKLKELQKAVDHRKAI  
ILSINLCSPEFTQADSKESRDLQDRLSQMNGRWDRVCSLLEEWGRLLQDALMQCQGFHEMSHGLLLML  
LENIDRRKNEIVPIDSNLDAEILQDHHKQLMQIKHELLESQLRVASLQDMSCQLLVNAEGTDCLEAKEKVH  
VIGNRLKLLKEVSRHIKELEKLLDVSSSQDLSSWSSADELDTSGSVSPSTSGRSTPNRQKTPRGKCSLS  
QPGPSVSSPHSRSTKGGSDSSLEPGPGRSGRGFLFRVLRAALPLQLLLLLLIGLACLVP  
MSEEDYSCALSNNFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var6 (public gi: 12698057) (SEQ ID NO: 300)

QRKLEQHKDLLQNTDAHKRAFHEIYRTRSVNGIPVPPDQLEDMAERFHFVSSTSELHLMKMEFLELKYRL  
LSLLVLAESKLKSWIIKYGRRESVEQLLQNYVSFIENSKFFEYEVYQILKQTAEMYVKADGSVEEAEN  
VMKFMNETTAQWRNLSVEVRSVRSMLEEVISNWDYRGNTVASLQAWLEDAEKMLNQSENAKKOFFRNLP  
PHWIQHTAMNDAGNFLIETCDENVSRDLKQQLLLNGRWREL FMEVKQYQADEMMDRMKEYTDCVVTLSA  
FATEAHKKQNLQKWQQFNSDLNSIWAWLGDTEEELEQLQRLELSTDIQTIELQIKKLKELQKAVDHRKAI  
KEQLTKVKECYSPLLYESQQLLIPLEELEKQMTSFYDSLKINEIITVLEREAQSSALFKQKHQELLACQ  
ENCKTTLTIEKGSQSVQKFVTLNVLKHFQDQTRLQRQIADIHVAFQSMVKKTGDWKKHVTNSRLMKKF  
EESRAELEKVLRIAQEGLEEKGDPEELLRRHTEFFSQLDQRVNLNAFLKACDELTDILPEEQEQGLQEA  
VRKLHKQWKDLQGEAPYHLLHLKIDVEKNRFLASVEECRTELDTRETKLMPQEGSEKIKEHRVFFSDKGP  
PHLCEKRLQILIEELCVKLPVRDPVRDTPGTCHVTLEKLRADISTYRKLMEDPKWKDYTSRFEFSSWIST  
NETQLKGIKGEAIDTANHGEVKRAVEEIRNGVTKRGETLSWLKSRKLVTEVSSSENAEQKQGDDELAKLS  
SFKALVTLLSEVEKMLSNFNGDCVQYKEIVKNSLEELISGSKEVQEAQEKILD TENLFEAQQLLLHHQQT  
KRISAKKRDVQQIAQAQOQGGGLPDRGHEELRKLESTLDGLERSRERQERRIQVTLRKWERFETNKETV  
VRYLFQTGSSHERFLSFSSLESLSSELEQTKEFSKRTESIAVQAENLVKEASEIPLGPQNKQLLQQA  
KS IKEQVKKLEDTLEEEYVIDKS

Human SYNE1 Protein sequence - var7 (public gi: 2895593) (SEQ ID NO: 301)

MKQNLQKWQQFNSDLNSIWAWLGDTEEELEQLQRLELSTDIQTIELQIKKLKELQKAVDHRKAIILSIN  
LCSPEFTQADSKESRDLQDRLSQMNGRWDRVCSLLEEWGRLLQDALMQCQGFHEMSHGLLLMLLENIDRR  
KN EIVPIDSNLDAEILQDHHKQLMQIKHELLESQLRVASLQDMSCQLLVNAEGTDCLEAKEKVHVIGNRL  
KLLKEVSRHIKELEKLLDVSSSQDLSSWSSADELDTSGSVSPSTSGRSTPNRQKTPRGKCSLSQPGPS  
VSSPHSRSTKGGSDSSLEPGPGRSGRGFLFRVLRAALPLQLLLLLLIGLACLVP  
MSEEDYSCALSNNFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var8 (public gi: 6330957) (SEQ ID NO: 302)

LDLCRQSNLCLQREEDLQRTDRYHDCMNVVEVFLEKFTTEWDNLARSDAESTAVHLEALKKLALALQER  
KYAIEDLKDQKQKMI EHLNLDDELKELVKEQTSHELRWFQLEDLIKRKIQVSVTNLEELNVVQSRFQELME  
WAEQQPNIAEALQSPPPDMAQNLLMDHLAICSELEAKQMLLSLIKADRVMA DLGLNERQVQKALS  
DAQSHVNCLSDLVGQRRKYLKALSEKTFQFLMAVFAQTSIQQHERKIMFREHICLLPDDVSKQVKTKCS

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AQASLKTYQNEVTGLWAQGRELMKEVTEQEKSEVLGKLQELQSVYDSVLQKCSHRLQELEKNLVS RKHFKE  
EDFDKACHWLKQADIVTFPEINLMNESTELHTQLAKYQNI LEQSPEYENLLLTQRTGTILPSLNEVDH  
SYLSEKNALPRQFNVI VALAKDKFYKQVEAILARKEYASLI ELTTSLSLELAQFLRMSKVPTDLAVEE  
ALSLODGCRAILDEVAGLGEAVDELNQKKEGFRSTGQPWQPDKMLHLVTLYHRLKRQTEQRVSLLEDTS  
AYQEHEKMCQQLERQLKSVKEEQSKVNEETLPAEEKLKMYSLAGSLQDSGIVLKRVTIHLEDLAPHLDP  
LAYEKARHQIQSWOGELKLLTSAIGETVTECESRMVQSIDFQTEMSRSLDWLRRVKAELSGPVYLDLNLQ  
DIQEEIRKIQIHQEEVQSSLRIMNALSHKEKEKFTKAKELISADLEHSLAELSELGDIGIQAELRTRQATL  
TEIYSQCQRYYQVFAANDWLEDAQEMLQLAGNGLDVESAENLKSHEFFSTEDQFHSNLEELHSLVAT  
LDPLIKPTGKEDLEQKVASLELRSRMSRDSGAQVDDLQRCCTAQWHDYQKAREEVIELMNDTEKKLSEFS  
LLKTSSEHEAEKLESHKALVSVVNSFHEKIVALEEKASQLEKTGNDASKATLSRSMTTVWQRWTRLRAV  
AQDQEKILEDAVDEWTFGNKVKKATEMIDQLQDKLPGSSAEKASKAELLTLEYHDTFVLELEQQQSAL  
GMLRQQTLSMLQDGAAPTGPGEPPMLMQEITAMQDRCLNMQEKVKTNGKLVKQELKDREMVETQINSVKCW  
VQETKEYLGNPTIEIDAQLEELQILLTEATNHRQNI EKMAEEQKEKYLGLYTI LPSLSLQLAEVALDLK  
IRDQIQDKIKEVEQSKATSQELSRQIQKLAQDLTTILT KLKAKTDNVVQAKTDQKVLGEELDGCNSKLME  
LDAAVQKFLEQNGQLGKPLAKKIGKLTTELHQQTIRQAENRSLKLNQAASHLEEYNEMLELILKWIEKAKV  
LAHGTIAWNSASQLREQYILHQVTLGKIIFKK

Human SYNE1 Protein sequence - var9 (public gi: 20521662) (SEQ ID NO: 303

WISLMENVIQKDEDNIKNSIGYKAIHEYLQYKGFKIDINCKQLTVDFVNQSVLQISSQDVESKRSKDT  
FAEQLGAMNKSQILQGLVTEKIQLEGLLESWSEYENNVQCLKTWFETQEKRLKQOHRIGDQASVQNAL  
KDCQDLEDLIKAKEKEVEKIEQNGLALIQNKKEVDSSIVMSTIRELGQTWANLDHVMGQLKILLKSVLDQ  
WSSHKVAFDKINSYLMEARYSLSRFRLLTGSLEAVQVQVDNLQNLQDDLEKQERSLQKFGSITNQLLKEC  
HPVPTETLTNTLKEVNMWRNNLLEETAEQLQSSKALLQLWQRYKDYKQCASTVQQQEDRTNELLKAATN  
KDIADDEVATWIQDCNDLLKGLGTVKDSL FVLHELGEQLKQQVDASAASAIQSDQLSLSQHLCALEQALC  
KQQTSLQAGVLDYETFAKSLAELEAWIVEAEIILQGDPSHSSDLSTIQERMEELKGQMLKFSSMAPDL  
RLNELGYRLPLNDKEIKRMQNLNRHWSLISSQTTERRFSKLQSFLLQHOTFLEKCEWMEFLVQTEQKLAV  
EISGNYQHLLEQRAHELFAEMFSRQQILHSIIIDGQRILLEQGVDDRDEFNLKLTLLSNQWQGVIRRA  
QQRRIIDSQIRQWQRYREMAEKLRKWLVEVSYLPMSSGLGSVPIPLQQAARTLFDEVQFKEKVFLRQQGSY  
ILTVEAGKQLLSADSGAEALQAEIAEIQEKWKSASMRLEEQKKLAFLLKDWKCEKGIADSLEKLRT  
FKKLSQSLPDHHEELHAEQMRCKELENAVGSWTDDLTQLSLLKDTLSAYISADDISILNERVELLQROW  
EELCHQLSLRRQQIGERLNEWAVFSEKNKELCEWLTQMESKVSQNGDILIEEMIEKLKKDYQEEIAIAQE  
NKIQLQQMGERLAKASHESKASEIEYKLGKVNDRWQHLLDLIAARVKKLKETLVAVQQLDKNMSSLRWL  
AHIESELAKPIVYDSCNSEEIQRLNEQOELORDIEKHSTGVASVLNLCEVLLHDCDACATDAECDISIQQ  
ATRNLDRWRNICAMSMERRLKIEETWRLWQKFLDDYSRFEDWLKSSERTAAFPSSSGVIYTVAKEELKK  
FEAFQVHECLTQLELINKYRRLARENRTDSACSLKQMVHEGNQRWDNLQKRVTSILRRLKHFIGORE  
EFETARDSILVNLTEMDLQLTNIEHFSECDVQAKIKQLKAFQOEISLHNHKEIQIIAQGEQLIEKSEPLD  
AAIIEELDELRRYCOEVFGRVERYHKKLIRLPLPDDHDLSDRELEDSAAALSDLHWHDRSADSLSP  
QPSSNLSLSLAQPLRSERSGRDTPASVDSIPLEWDHVDYLSRDLESAMSRALPSEDEEGQDDKDFYLRGA  
VALSGDHSALSESQIRQLGKALDDSRFOIQQTENIIRSKTPTGPELDTSYKGYMKLLGECSSSIDSVKRL  
HKLKEEESLPGFVNLTSTETQTAGVIDRWELLQAQALSKELRMKQNLQKQQFNSDLNSIWAWLGDTEE  
ELEQLORLELSTDIQIIEQLIKELQKAVDHRKAIILSINLCSPEFTQADSKESTRDLQDRLSQMNWR  
DRVCSLLEEWGRLLQDALMQCGFHEMSHGLLMLLENIDRRKNEIVPIDSNLDAEILQDHHKQMLQIKHE  
LLESQLRVASLQDMSQQLLVNAEGTDCLEAKEKVHVIGNRLKLLKKEVSRHIKELEKLLDVSSSQDLSS  
WSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQPGPSVSSPHSRSTKGGSDSSLSEPGPGRSRGFL  
FRVLRAALPLQLLLLLLIGLACLVPMSSEEDYSCALSNNFARSFHPMLRYTNGFPPL

Human SYNE1 Protein sequence - var10 (public gi: 28195689) (SEQ ID NO: 304

MTEKLQYLTSVYCTEKMSQQVAELGRETEELRQMIKIRLQNLQDAADMKKFEAELKKLQAALQAAQATL  
TSPEVGRSLKEQLSHRQHLLSEMESLKPQVAVQLCQSALRIPEDVVASLPLCHAALRQEEASRLQHT  
AIQQCNIMQEAUVQYEQYEQEMKHLQQLIEGAHREIEDKPVATSNIQELQAI SRHEELAQKIKGYOEQI  
ASLNSKCKMLTMKAKHATMLLTVEVEGLAEGTEDLDGELLPTPSAHPVVMTAGRCHTLLSPVTEESG  
EEGTNSEISSPPACRSPSPVANTDASVNQDIAYYQALSARLQTDAAKIHPSTASQEFYEPGLEPSATA  
KLGDQLRSWETLKNVISEKQRTLYEALERQQKYQDSLQISTKMEAIELKLSSEPEGRSPESQMAEHQA  
LMDEILMLQDEINELQSSLAELVSESCEADPAEQALQSTLTVLAERMSTIRMKASGKRQLLEEKLNQ  
LEEQRQEALQRYRCEADELDSWLLSTKATLDTALSPPKFPMDEAQLMDCQNMLVEIEQKVVALSELV  
HNENLLLEGKAKHTKDEAEQLAGLRLRLKGSLLLELQRLHDKQLNMQGTAEKEESVDLTATQSPGVQVE  
LAQARTTWTQQRQSSLOQKELEQELAEQKSLRSVASRGEIILIQHSAETSQDAGEKPDVLSQELGME  
GEKSAEDQMRMKWESLHQEFSTKQKLLQNVLEQEQLVYSRPNRLLSGVPLYKGDVPTQDKSAVTSLL  
DGLNQAFEEVSSQSGGAKRQSIHLEQKLYDGVSATSTWLDVDEERLFVATALLPEETETCLFNQEI LAKD  
IKEMSEMDKNKNLFSQAFPENGDNRDVIEDTLGCLLGRSLSDSVVNQRCHQMKERLQIILNFQNDLV  
LFTSLADNKYIILQKLANVFEQPVAEQIEAIQQAEDGLKEFDAGIIELKRRGDELQVEQPSMQELSKLQD  
MYDELMMIIGSRSSGLNQNLTLKSQYERALQDLADLLETGQEKMAGDQKIVSSKEEIQQLDKHKEYFO

Figure 36 part - 119



GLESHMILTVTLFRKIISFAVQKETQFHTELMAQASAVLKRAHKGVELEYILETWSHLDEDDQQLSRQL  
 EVVSSIPVGLVEENEDRLIDRITLYQHLLKSSLINEYQPKLYQVLDGKRLLLISISCSDESQNLQLGEC  
 WLSNTNMKSKELHRLLETILKHTRYQSESADLIHWLQSAKDRLEFWTQQSVTPQELEMVRDHLNLFLEF  
 SKEVDAQSSSLKSSSVLSTGNQLRLKQVDTATLRSELSRIDSQWTDLLTNIIPAVQEKHLQLOMDKLP SRHA  
 ISEVMSWTSMLMENAIQKQEDNIKNSIGYKAIHEYLQKYKGFKIDINCKQLTVDVFNQSVLQISSQDVESK  
 RSDKTDFAEQGLGAMNKSQWILQGLVTEKIQLEGLLESWSYEYNNVQCLKTWFETQEKRLKQOHRIGDQA  
 SVQNALKDCQDLEDLIKAKDKEVEKIEQNGLALIQTKKEDVSSIVMSTLRELQGTWANLDHVMGQLKILL  
 KSVLDQWSSHKVAFDKINSYLMARYSLSRFRLLTGSLEAVQVQVDNLQNLQDDLEKQERSLQKFGSITN  
 QLLKECHPPVTETLTNTLKEVNMNRWNNLLEEIAEQLOSSKALLQWLQRYKDYSKQCASTVQQQEDRTNEL  
 LKAATNKDIADDEVATWIQDCNDLLKGLGTVKDSLFLVHELGEQLKQQVDASAASAIQSDQLSLSQHLCA  
 LEQALCKQQTSLQAGVLDYETFAKSLAELEAWIVEAEIILQGGDPSHSSDLSTIQRMEELKGQMLKFSS  
 MAPDLRLNELGYRLPLNDKEIKRMQNLNRHWSLISSQTTTERFSKLQSFLLQHQTFLEKCEWMEFLVQT  
 EQKLAVEISGNQHLLEQORAHLEFQAEMFSRQQLHSIIIDGQRILLEQGVDDRDEFNLKLTLLSNQWQ  
 GVIRRAQRRGIIDSQIRQWQRYREMAEKLRLKWLVEVSYLPMGLGSVPPIPLQQARTLFDEVQFKEKVFL  
 RQQGSYILTVEAGKQLLSADSGAEALQAEALAEIQEKWSASMRLEEKKKLAFLKDWKCEKGIADS  
 LEKLRTFFKKLSQSLPDHHEELHAEQMRCKELENAVGSWTDDLTLQSLKLTLSAYISADDISILNERVE  
 LLQRQWEELCHQLSLRRQIGERLNEWAVFSEKNKELCEWLTQMESKVSQNGDILIEEMIEKLKKDYQEE  
 IATAQENKIQLQMGRLAKASHESKASEIEYKLGKVNDRWQHLLDLIAARVKLKETLVAVQQLDKNMS  
 SLRTWLHIESELAKPIVYDSCNSEEIQRKLNQEQELQDRIEKHSTGVASVLNLCEVLLHDCDACATDAE  
 CDSIQQATRNLDRRWRNICAMSMERRLKIETWRLWQKFLDDYSRFDWLKSSERTAAFPSSSGVIYTV  
 KEELKKFEAFQORVHECLTQLELINKQYRRLARENRTDSACSLKQMVHEGNQRWDNLQKRVTSILRLKX  
 FIGQREEFETARDSILVWLTEMQLTNIHFSECDVQAKIKQLKAFQOEISLNHNKIEQIIAQGEQLIE  
 KSEPLDAAIIIEEELDELRRYCEVFGFRVERYHKKLIRLPLPDEHDLSDRELELEDSALSDLHWHDRSA  
 DLSLSPQPSNLSLSLAQPLRSERSGRDTPASVDSIPLWDHHDYDLSDRLESAMSRALPSEDEEGQDDKD  
 FYLRGAVALSGDHSALQSIRQLGKALDDSRFQIQQTENIIRSKTPTGPELDTSYKGYMKLLGECSSSID  
 SVKRLHKLKEEESLPGFVNLHSTETQTAGVIDRWELLQAQALSKELRMKQNLQKWQQFNSDLNSTIWA  
 LGDTEEELEQLQRLLELSTDIQTIELQIKKLKELQKAVDHRKAIILSINLCSPEFTQADSKESTRDLQDRS  
 QMNGRWDRVCSLLEEWRLQDALMQCGFHEMSHGLLLMLENIDRRKNEIVPIDSNLDAEILQDHHKQL  
 MQIKHELLESQRLVASLQDMSCQLLVNAEGTDCLEAKEKVHVIGNRLKLLKKEVSRHIKELEKLLDVSSS  
 QQDLSSWSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQPGPSVSSPHSRSTKGGSDSSSLSEPGPR  
 SGRGFLFRVLRAALPLQLLLLLLIGLACLVPMSEEDYSCALSNNFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var11 (public gi: 28195677) (SEQ ID NO: 305)

MVVAEDLSALRMAEDGCVDADLPDCNCDVTRARVKKLKETLVAVQQLDKNMSSLRTWLHIESELAKPIV  
 YDSCNSEEIQRKLNQEQELQDRIEKHSTGVASVLNLCEVLLHDCDACATDAECDSIQQATRNLDRRWRNIC  
 CAMSMERRLKIETWRLWQKFLDDYSRFDWLKSSERTAAFPSSSGVIYTVAKEELKKFEAFQORVHECL  
 TQLELINKQYRRLARENRTDSACSLKQMVHEGNQRWDNLQKRVTSILRLKXFIGQREEFETARDSILVW  
 LTEMQLTNIHFSECDVQAKIKQLKAFQOEISLNHNKIEQIIAQGEQLIEKSEPLDAAIIIEEELDEL  
 RYCEVFGFRVERYHKKLIRLPLPDEHDLSDRELELEDSALSDLHWHDRSADLSLSPQPSNLSLSLAQ  
 PLRSERSGRDTPASVDSIPLWDHHDYDLSDRLESAMSRALPSEDEEGQDDKDFYLRGAVALSGDHS  
 EAYVKLTENAIKNTSGDHSALQSIRQLGKALDDSRFQIQQTENIIRSKTPTGPELDTSYKGYMKLLGEC  
 SSSIDSVKRLHKLKEEESLPGFVNLHSTETQTAGVIDRWELLQAQALSKELRMKQNLQKWQQFNSDLN  
 SIWAWLGDTEEELEQLQRLLELSTDIQTIELQIKKLKELQKAVDHRKAIILSINLCSPEFTQADSKESTRDL  
 QDRLSQMNGRWDRVCSLLEEWRLQDALMQCGFHEMSHGLLLMLENIDRRKNEIVPIDSNLDAEILQD  
 HHKQLMQIKHELLESQRLVASLQDMSCQLLVNAEGTDCLEAKEKVHVIGNRLKLLKKEVSRHIKELEKLL  
 DVSSSQDLSSWSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQPGPSVSSPHSRSTKGGSDSSSLSE  
 PGPRSGRGFLFRVLRAALPLQLLLLLLIGLACLVPMSEEDYSCALSNNFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var12 (public gi: 28192628) (SEQ ID NO: 306)

MATSRGASRCPRDIANVMQRLQDEQEIVQKRTFTKWINSHLAKRKPPMVVDLDFEDMKDGVKLLALLLEV  
 SGQKLPCQGRMKRIHAVANIGTALKFLEGRKIKLVNINSTDIADGRPSIVLGLMWTIILYFQIEELTS  
 NLPQLQSLSSASSVDSIVSSETPSPPSKRKVTTKIQGNAKKALLKWVYTAGKQTGIEVKDFGKSWRS  
 VAFHSHVIAIRPELVLETVKGRSNRENLEDAFTIAETELGIPRLLPEDVDVDPKDEKSIMTYVAQFLK  
 HYPDIHNASTDQEDDEILPGFPSFANSVQNFKREDRVIKEMKVWIEQFERDLTRAQMVESNLQDKYQS  
 FKHFRVQYEMKRKQIEHLIQPLHRDGLSLDQALVQKSWDRVTSRLFDWHIQLDKSLPAPLGTIGAWLYR  
 AEVALREEITVQQVHEETANTIQRKLEQHK

Human SYNE1 Protein sequence - var13 (public gi: 28192522) (SEQ ID NO: 307)

HIQLDKSLPAPLGTIGAWLYRAEVALREEITVQQVHEETANTIQRKLEQHKRCRTMMDLLQNTDAHKRA  
 FHEIYRTRSVNGIPVPPDQLEDMAERFHFVSPTSELHLMKMEFLELKYRLLSLLVLAESKLKSWIICKYGR  
 RESVEQLLQNYVSFIENSKFFEYEVYQILKQTAEMYVKADGSVEEAENVMKFMNETTAQWRNLSVEVR  
 SVRSMLEEVISNWDYRGNTVASLQAWLEDAEKMLNQSENAKKDFRNLPHWIOHTAMNDAGNFIETCD

Figure 36 part - 120

EMVSRDLKQQLLLLNGRWRELFMEVKQYAQADEMMDRMKEYTDCVVTLsafateahKKLSEPLEVSFMNV  
KLLIQDLEDIEQRVPVMDAQYKIITKTAHLITKESPOEEGKEMFATMSKLKEQLTKVKECYSPLLYESQQ  
LLIPLEELEKQMTSFYDSLKGKINEIITVLEREAQSSALFKQKHQ

Figure 36 part - 121

Unigene Name: TTC3 Unigene ID: Hs.118174 Clone ID: GD\_1105

Human TTC3 mRNA sequence - var1 (public gi: 2687860) (SEQ ID NO: 202)

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ATTAAATAAACATCTTCTGGCCACTTCTGTTTCAACATCAAAACAGTTCCGTAATATCACGATTGCATC
CCTGTGTGGACGCCAACCAATTACGCTGCTTCTGAGATAAAATTTGAAGAACTACAACATCTTGAGTTGAT
GGAAGATATTGTGGATTGGCAAAGAAAGTTGCTAATGATTCAATCCTTATTGGAGGCTTATTGAGAATT
GGTTGTAAATAGAAAAATAAATCTTGGCAATGGAAGAAGCTCTGAATTGGATAAAATATGCAGGCGATG
TAACAATTCTAACTAAATTAGGATCAATTGACAATTGTTGGCCTATGTTAAGTATTTCTTTACTGAATA
CAAGTACCACATAACTAAAATTGTAATGGAAGACTGCAATTTGCTTGAAGAACTTAAACTCAAAGTTGT
ATGGATTGTATAGAGGAAGGAGAACTAATGAAAATGAAAGGAAATGAAGAGTTTCCAAAGAAAGATTTG
ATATAGCTATTATCTATTACACCAGAGCCATTGAATATAGACCTGAAAACCTACCTTCTTTATGGTAACCG
AGCTCTTTGTTTTCTTCTGACTGGACAGTTTGAAGAAATGCACCTCGGTGATGGAAGAGAGCCACTATTCTG
AAGAACACTTGGCCAAAGGGTCATTATCGTTATTGTGATGCTCTTCTATGCTGGGGGAATATGACTGGG
CCCTGCAAGCAAAACATAAAAGCTCAAAAACCTCTGTAAAAATGACCTGAGGGAATCAAGGATCTAATTC
GCAGCATGTAAAGTTACAAAAACAAATAGAAAGACCTACAAGGTCGAACAGCAATAAGGATCCAATTTAA
GCCCTTTTATGAAAACAGGGCCTACACACCTAGGAGTTTATCAGCACCTATATTTACTACTTCACTTAACT
TTGTGGAGAAGGAAAGAGATTTTCAAAAAATTAATCACGAAATGGCCAACGGTGGTAATCAGAATCTAAA
GGTGGCGGATGAGGCGTTGAAGGTAGATGATTGTGACTGTCATCCTGAATTTTACCACCATCAAGTCAG
CCTCCAAACATAAAGGAAAAACAAAATCTCGAAACAATGAATCAGAAAAGTTCAAGTTCTAGTTCCACAT
TGACTTTACAGCAGATTTGAAGAACATCTTGGAGAAACAGTTTCTAAATCTTCAAGAGCTGCACACCA
GGATTTTGCTAATATAATGAAAATGCTGAGAAGCTTAATTCAGATGGCTATATGGCCTTATTGGAGCAG
CGTTGCCGCGAGCGCTGCACAGGCCTTTACAGAGTTGCTGAACGGTTTAGATCCTCAAAAAATAAGCAAT
TGAACCTGGCCATGATTAACATATGTTTTGGTCTGCTATGGACTTGCCATTTCTCTCTCTTGGGAATAGGACA
GCCTGAGGAATTATCTGAAGCCGAAAACCAAGTTTAAAGAGGATTATTGAACACTACCCAGTGAGGGCCTT
GATTGTCTTGGCCTACTGTGGAATTGGAAAAGTATATTTGAAAAAAACAGATTTCTAGAAGCTCTCAATC
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TATTGAAGAGTCTCAGCCACAAAAAATAAGATGCTGTTAGAGAAATTTGTTGAAGAATGCAAGTTCCCT
CCAGTGCCAGATGCCATTTGTTGCTATCAGAAGTGCCATGGATATTCTAAGATCCAGATATACATAACTG
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ACCCCTGACTGTGAAGGTGTCAATTTCTAAGATTATCATCTTCAGCAGTGTTGGTGAAGTTAAATGTGAAT
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CAAGAAAGAATGGAGGAGGACTTAAGAGAAAGTAATCCACCCAAAAATGAAGAGCAGAAAGAACTGTAG
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CAAATTAGCCGCTGGATCCAAAACTTAATAGCTTTGGCTTAGATGCCACAGGAATTTCTTTTCTCGT
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GGCCCATTTGCAGTGCTGACCATCTTCGGCAAGATGTAGAAGAATTGGAAGCTCTCTATGACCAACACA
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```

Figure 36 part - 122

CGTTCTTGAGGATGTGAAACCACTTATTGGGCTCAATCCCATTGGTTCACAGGATACTGTACGTATCT  
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TACACCAGCATATATACACCCCTTGGCCAGCCTTTCTCTGAATATCAGCTACCAAGATCAGTACCAGTGG  
TGCCGTCTTTTGTAGCCAATGACAGAGCAGATAAAAAATGCTGCTGCCTATTTTGGGGTCACTATTTGAA  
TGCTGAGAATGTTGCTGGTCCAGATTGCCTCTGAAACACAGATCCTTGAGGGCTCTTTGGGAATATCT  
GTAAAGTCACACTGCAGCACAGGTGATGCTCATACAGTCTGAGTGAGTCTAACAGAAATGATGAGCACT  
GTGGAAATTCTAACACAAATGTGAAGTAATTCAGAAAGCACCAGTGCAGTAACAAACATTCCACACGT  
GCAGATGGTTGCCATACAGGTATCTTGGAAACATAATACACCAAGAAGTCAATACTGAGCCATATAATCCT  
TTTGAGGAACGACAAGGGGAAATTTACGGATTGAAAAGGAGCACCAAGTATTACAAGACCAACTTCAAG  
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GAAAAGGCACCTTAGAAGAAAACAAGATCTCAAAGACGGAATTAGATTGGTTCCTTCAAGATTGGAAAGA  
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AAAAGGTTTCAAATGCCAGTGAAATGTATACCCAGAAAAATGATGGAAAGGAAAAGGAACATGAATTACA  
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AAAGGGAAAGAGGATTATGAAGAGAGTCATCAGAGAGCTGTGGCTGCAGAGGTATCCGTACTTGAAACT  
GGAAGGAGAGTGAAGTGTATAAGCTACAGATCATGGAGTCACAAGCAGAAGCCTTTCTGAAGAAGCTGGG  
GCTGATTAGCCGTGATCCTGCAGCATATCCTGACATGGAGTCTGATATACGTTTCTGGAATTGTTTCTT  
TCTAATGTTACAAAAGTAATTGAGAAAAGCAAAGTCTCAGTTTGAAGAACAAATTAAGGCAATTAATAATG  
GTTCTCGGCTCAGTGAACCTTTCTAAAGTGCAAGTTTCTGAGCTTTCATTTCTGCTGTAAACACGGTTCA  
TCCCGAGTTACTCCCTGAGTCTTCAGGCGACGATGGCCAAGGGCTTGTGACTTCTGCAAGCGACGTGACT  
GGAAACCACGCAGCACTTCACAGGGATCCTAGTGTGTTCTCTGCTGGTGATTCCCCAGGGGAGGCTCCTT  
CTGCGCTGTTGCCAGGGCCACCCCTGGTCAGCCTGAAGCCACTCAGTGCAGAGGGCCAAAACGGGGCTGG  
CAGGCAGCTCTGTGCAAGACGAAGCCCTGTGACTGATCGGAAGCAGCCTGTTCTCCAGGACGTGCTGCG  
CGTTCAAGCCAGTCTCCAAAAAGCCGTTCAATAGTATTATTGAGCACCTGTGAGTGGTATTCCCATGTT  
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GAGTATTGATGAAATTTGTCCAAAGAGTGACAGAACACATTCTAGATGAACAGAAAAAGAAAAAGCCAAAC  
CCAGGAAGGACAAGAGGACTTATGAGCCAGCTCTGCCACCCCGTGACCAGGTCTCTCCAGGGCTCAC  
CCTCGGTGGTTGTTGGCCATCACCCTAACCCAAAGGGGAGAAAGCAGAAGATGTCCCTGTGAGGATTGC  
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GGGCACAAGTATCACAAGGGTGCTTTAAGCAGTGGCTTAAAGGGCAGAGCGCTTGCCCGGCTGCCAGG  
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CCTTTGTTCACTGTGAGTTCTGATGTCTTAGTGACTTAGTCTTAGAAGCTCACGCCTTAGTTTGAACA  
GATTCTCCACGGTGGTCCCCAAAACACTGTCTGCATATCCATAAGAATTGAGCGCTATGGGTGTTAAGT  
GCATGAGGATCAGTTTGAGCAGCAAGTACAAAAGGAGAAGAGGAACATCCGTTGAATGAGTGTGTTTG  
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Human TTC3 mRNA sequence - var2 (public gi: 1632765) (SEQ ID NO: 203)

TACATTTGGAAAGCTTACTGACATGCAGAAATAGTACAGAAAAACATACAAATAGGAATGTTATTGGCT  
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GATCGAGACCATCGTGGCTAACATGGTGAAACCTGTGCCTACTAAAAATTCAAAAAATTAGCCAGGTGT  
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AAACAAAAGAAATGCTATGATAGGTACAATGTGCAAAATGTGCAAGAAATACTTCAGAAATATTAAAGTA  
GTTATTCTGGGTAGTTGTGATTGTGACTCTGGGTGACTTTTCCCTTTGTTTTATTTTCTGTATTTTC  
CAATTTCTATAATGGACATATATTATATGATTTTTTTAATTAATAATATCTTTTGACTAGATAATA

Figure 36 part - 123

TACATGGAATAATTCACAAAGTACACATATGCAAGATATAATACTTTTACTATAAAAGAGTGAAAATTTT  
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GCCAAAGGGTCATTATCGTTATTGTGATGCTCTTTCTATGCTGGGGGAATATGACTGGGCCCTGCAAGCA  
AACATAAAAGCTCAAAAACCTCTGTAAAAATGACCCTGAGGGAATCAAGGATCTAATTACAGCAGCATGTAA  
AGTTACAAAAACAAATAGAAGACCTACAAGGTGCAACAGCAATAAGGATCCAATTAAAGCCTTTTATGA  
AAACAGGGCCTACACACCTAGGAGTTTATCAGCACCTATATTTACTACTTCACTTAACCTTTGTGGAGAAG  
GAAAGAGATTTTCAAAAAATTAATCACGAAATGGCCAACGGTGGTAATCAGAATCTAAAGGTGGCGGATG  
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TAAAGGAAAAACAAAAATCTCGAAACAATGAATCAGAAAAAGTTCAAGTTCTAGTTTACCATTGACTTTACCA  
GCAGATTTGAAGAACATCTTGGAGAAAACAGTTTCTAAATCTTCCAGAGCTGCACACCAGGATTTTGCTA  
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TATCTGAAGCCGAAAACCAAGTTTAAAGAGGATTATTGAACACTACCCCAAGTGGGGCCTTGATTGCTTGGC  
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AACAGAGTAAAGACAAGAATATTTCTGCATGTTTGGAGTGGCTTAAAGAAGTGGAGCCCAATTAGCCG  
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TCTTAACTGCTTGATTTTAGTATCATGACTTTCTCTGGAATGAGAAATATGGTCAAACTAGACTCT  
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GAAGTGTATAAGCTACAGATCATGGAGTCACAAGCAGAAGCCTTTCTGAAGAAGCTGGGGCTGATTAGCC  
GTGATCCTGCAGCATATCTGACATGGAGTCTGATATACGTTTATGGGAATTGTTTCTTTCTAATGTTAC  
AAAAGAAATTGAGAAAGCAAAGTCTCAGTTTGAAGAACAATTAAGGCAATTAATAATGGTTCTCGGCTC

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AGTGAACTTTCTAAAGTGACAGATTCTGAGCTTTCAATTCCTGCCTGTAACACGGTTCATCCCGAGTTAC  
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AGCACTTCACAGGGATCCTAGTGTGTTCTCTGCTGGTGATTCCCCAGGGGAGGCTCCTTCTGCGCTGTTG  
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TGTGACAACGAAGCCCTGTGGCTGATCGGAAGCAGCCTGTTCCCTCCAGGACGTGCTGCGCGTTCAAGCCA  
GTCTCCAAAAAGCCGTTCATAGTATTATTGAGCACCTGTGAGTGGTATTTCCCATGTTACAACAGCACT  
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GTTGCACCATCACCCAAAACCAAGGGGCGAGAAAGCAGAAGATGTCCCTGTGAGGATTGCACTGGGTGCAA  
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CACTTTTTAATTAGTATCGACTAAGACTTTTTCCCTGGAATCGAGGCTGTGTGTCGCTCATCCAGCC  
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CAGCGAGTGTCTGGGATCCGCATCCAGCCGTGCTGAGCACACAACAGGCTGTGTGTGAAATGGCCACCA  
CCATTCTCTTCCCAACCCACCAAAAAAGAGAAGCTGTGTCTTTAGACAACCCCTGAGGTATCTGTGTT  
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TGTAAGTGCATTAGAAACCATGAAAAAATTAGATATTGTTTGTGACTTTTAGACAGTGGTAAATATAGA  
ACCATGAATCTGGTCACATTCCATTTCTCTCAACATGAAGGATCAAAAAATGTTTTCAATGTGTTCT  
TTGTTCCACTGGAACTTAGAGTCATGAGTTTATGAGCTGATTTGGTCACCTTCTCTGCCTTTGTTTAC  
TGTGAGTCTGATGTCTTAGTGACTTAGTCTTCTAGAAGCTCACGCCTTAGTTTGAACAGATTCTCCACG  
GTGGTCCCCAAACATGCTGCTATCCATAAGAATTGAGCGCTATGGGTGTTAAGTGCATGAGGATC  
AGTTTGCAGCAGCAAGTACAAAAGGAGAGGAACATCCGTTGAATGAGTGTGTTTTGTACATAAATCTC  
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Human TTC3 mRNA sequence - var3 (public gi: 1632763) (SEQ ID NO: 204)

CTGAAGTAGTTGCCAGTGATCTTGAAACGTGACAGTAACCAAGAGATAAATAGGTGACAATGACAGGAAA  
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CTAGCTTGGTGACATGAGCAAAATTAAGTGTGAGTGTGAGTGTGAGTGTGAGTGTGAGTGTGAGTGTGAGT  
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TATGTGACACATAGTACAAATAGTTTGTCTAGGAAGATTGTTATTATTCTTCACTTGTGATATTGTGAAGT  
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Figure 36 part - 125

TCTGAGATAAAATTTGAAGAACTACAACATCTTGAGTTGATGGAAGATATTGTGGATTGGCAAGAAAG  
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AATGGAAGAAGCTCTGAATTGGATAAAATATGCAGGCGATGTAACAATTCTAACTAAATTAGGATCAATT  
GACAATTGTTGGCCTATGTTAAGTATTTTCTTTACTGAATGAAGGAGAACTAATGAAAATGAAAGGAAAT  
GAAGAGTTTTCCAAAGAAAGATTTGATATAGCTATTATCTATTACACCAGAGCCATTGAATATAGACCTG  
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TGATGGAAAGAGAGCCACTATTCTGAAGAACACTTGGCCAAAGGGTCATTATCGTTATTGTGATGCTCTT  
TCTATGCTGGGGGAATATGACTGGGCCCTGCAAGCAAAACATAAAAGCTCAAAAACCTGTGAAAAATGACC  
CTGAGGGAATCAAGGATCTAATTCAGCAGCATGTAAGTTACAAAAACAAATAGAAGACCTACAAGGTCTG  
AACAGCAATAAGGATCCAATTAAAGCCTTTTATGAAAACAGGGCCTACACACCTAGGAGTTTATCAGCA  
CCTATATTTACTACTTCACTTAACCTTTGTGGAGAAGGAAAGAGATTTAGAAAAATTAATCACCAGAAATGG  
CCAACGGTGGTAATCAGAATCTAAAGGTGGCGGATGAGGCGTTGAAGGTAGATGATTGTGACTGTCTATCC  
TGAATTTTACCACCATCAAGTCAGCCTCCAAAACATAAAGGAAAAACAAAAATCTCGAAACAATGAATCA  
GAAAAGTTCAGTTCTAGTTCAACCATGACTTTACCAGCAGATTTGAAGAACATCTTGGAGAAACAGTTT  
CTAAATCTTCCAGAGCTGCACACCAGGATTTTGCTAATATAATGAAAATGCTGAGAAGCTTAATCAAGA  
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CCATTTCTCTCCTTGGAAATAGGACAGCCTGAGGAATTATCTGAAGCCGAAAACCAAGTTTAAAGAGGATTAT  
TGAACACTACCCGATGAGGGCCTTGATTGCTTGGCTACTGTGGAATTGGAAGTGTATTGAAAAA  
AACAGATTTCTAGAAGCTCTCAATCACTTTGAGAAAGCAAGAACCTTGATTATCGTCTTCTGGAGTGT  
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TCTAAGATCCAGATATACATACTGATCCAGCTTAAAGGGTTTTATACGCATCAGCTGTTGCCAGTACT  
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AGTGGTGGTGAAGTTAAATGTGAATTGAAACACAAGGTTCATAAAGAAAGGTTCTCCAAGACCTATTC  
TGAAACAGAAATGTTCTAGCCTAGAGAACTAAGACTGAAAGAAGACAAAAATGAAGAGAAAGATCCA  
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GGTGAAGCACCGTTTAGTTCAACCAAGGTGAAAAACAAAGCAAGAAAAAGCAAGCCAAAGGATTCAAAGC  
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CCTTGAGGGCTCTTTGGGAATATCTGTAAAGTCACACTGCAGCACAGGTGATGCTCATACAGTCTCTGAGT  
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CAAGTATTACAAGACCAACTTCAAGAAGGTGATGAAAAATATGAGCAGATAAAACTTAAGGGCTTAGAAG  
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CTAAATCACTGAAGAAGAAATTAATAAAGGTTTTCAATGCCAGTGAATGTATACCCAGAAAAATGATG  
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Figure 36 part - 126



AATGAAATAGAAAGAGTATATAAAGAAAGGAAAGAGGATTATGAAGAGAGTCATCAGAGAGCTGTGGCT  
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CAGAAGCCTTTCTGAAGAAGCTGGGGCTGATTAGCCGTGATCCTGCAGCATATCCTGACATGGAGTCTGA  
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CATTTCTGCTGTAACACGGTTCATCCCGAGTTACTCCCTGAGTCTTCAGGCCACGATGGCCAAGGGCT  
TGTGACTTCTGAAGCGACGTGACTGGAACACGACGACTTCACAGGGATCCTAGTGTGTTCTCTGCT  
GGTGATCCCCAGGGGAGGCTCCTTCTGCGCTGTTGCCAGGGCCACCCCTGGTCAGCCTGAAGCCACTC  
AGCTGACAGGGCCAAAACGGGCTGGCCAGGCAGCTCTGTGAGAACGAAGCCCTGTGGCTGATCGGAAGCA  
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CACCTGTGAGTGTATTCCCATGTTACAACAGCACTGAGCTTGCTGGTTTTATTAAAAAGTGCGAAGCA  
AAAAACAAGAACTCACTCTCAGGATTGAGTATTGATGAAATTGTCCAAAGAGTGACAGAACACATTTCTAGA  
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AGTGAATACTTTGATGATTGCCAACAGTGGCTAATAAAATGACGGCTACCACACTCATGGGTCACTGGGG  
CTGCGCAGGGCTCTTTGAGGTGGGTGGCTTCTTTTGAAAGTACTATGAACGTCTCGAAGCAGTATTCTA  
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ACATGAAGGATCAAAAAATGTTTTTCAATGTGTTCTTTGTTCCTGGAACCTTAGAGTCATGAGTTTAT  
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GAAGCTCACGCCTTAGTTTGAAACAGATTCTCCACGGTGGTCCCCAAAACACTGTCTGCATATCCATAAG  
AATTGACGCTATGGGTGTTAACGTGCATGAGGATCAGTTTGACAGCAAGTACAAAAGGAGAAGAGGA  
ACATCCGTTGAATGAGTGTGTTTTGTACATAAATCTCAGATACTTGTGAACATGCCTTATATTTGTCCAAC  
AACTGTGAGAATAAAGAACATTCTAAATGAG

Human TTC3 mRNA sequence - var4 (public gi: 1632761) (SEQ ID NO: 205)

CTGAAGTAGTTGCCAGTGATCTTGAAACGTGACAGTAACCAAGAGATAAATAGGTGACAATGACAGGAAA  
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AGTGTCTTGTCTTTGAAAGAAGAACTTGGTTTATCCTAATAATAGTAGGATAAATAAGGTGAAGTGAT  
AGGTACAAGTAATAGTGTTTATGATGCGCTGGTGATGATAGGAAAAGAAAGCCATTATATGGGCAAGAGC  
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ATCCTTATTATTGAAGATTCTTCAGGAAAAAAAACCTTAGTCTGAACTTTAGCACCAATCCCCCTTG  
CCCCCATTTGAAATACGTATTTTTTAAACATGGCTTTTGATAATGTGAGGGTTTTTCTCTTTTGGCATT  
TAGCAGTGTGATTTGTGATTGTCAGTAGTTGTGAGAGCATTAGAAGCAGCAGTCGATAGGAGGATGGAAG  
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GCCCCAAGACAGAAACACACTGAGATGGATAGGAGAATATGAGCAGTTGATAGGAAAGTTCTCAGTGGAGT  
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AGATTAAATATCTGGAGAGAGAGGAAAGTCAGCAGAAATGGGGACGAGAATCTTTCGGAGCTCAGTGT  
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Figure 36 part - 127



TGGACAATTTTGGCTGAGGGAGATTTCACTGTGGCGGATTATGCCTTGTTAGAAGATTGCCCTCACGTGGA  
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TCTGAGATAAATTTGAAGAACTACAACATCTTGAGTTGATGGAAGATATTGTGGATTGGCAAAGAAAG  
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TCATACAGTCTGAGTGAGTCTAACAGAAATGATGAGCACTGTGGAAATCTAACAAACAAATGTGAAGTA  
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Figure 36 part - 128

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 TCTGCATATCCATAAGAAATGAGCGCTATGGGTGTTAAGCTGCATGAGGATCAGTTTGACAGCAAGTA  
 CAAAAGGAGAAGAGGAACATCCGTTGAATGAGTGTGTTTTGTACATAACTTCAGATACTTGTGAACATGC  
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Human TTC3 mRNA sequence - var5 (public gi: 2969902) (SEQ ID NO: 206)

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 TAGGCAACTATACAAAACAGATAAGATAAGATGCACGATTGACGATCCTCTATGTAAAGGACGACATGTA  
 CAATTCACGTTCTTAAGTATGAGAGTATTTGAAGAACTACAACATCTTGAGTTGATGGAAGATATTG  
 TGGATTGGAAGGAAAGTTGCTAATGATTCAATCCTTATTGGAGGCTTATTGAGAATTGGTTGTAAAT  
 AGAAAATAAAATCTTGGCAATGGAAGAAGCTCTGAATTGGATAAAATATGCAGGCGATGTAACAATTCTA  
 ACTAAATTAGGATCAATTGACAATTGTTGGCCCTATGTTAAGTATTTTCTTTACTGAATACAAGTACCACA  
 TAACATAAAATTGTAATGGAAGACTGCAATTTGCTTGAAGAACTTAAACTCAAAGTTGTATGGATTGTAT  
 AGAGGAAGGAGGACTAATGAAAATGAAGGAAATGAAGAGTTTCCAAAGAAAGATTGATATAGCTATT  
 ATCTATTACACCAGAGCCATTGAATATAGACCTGAAAACCTACCTTCTTTATGGTAACCGAGCTCTTTGTT  
 TTCTCGTACTGGACAGTTTAGAAATGCACTCGGTGATGGAAGAGAGCCACTATTCTGAAGAACACTTG

Figure 36 part - 129

GCCAAAGGGTCATTATCGTTATTGTGATGCTCTTTCTATGCTGGGGGAATATGACTGGGCCCCTGCAAGCA  
AACATAAAAGCTCAAAAACCTCTGTAAAAATGACCCTGAGGGGAATCAAGGATCTAATTTCAGCAGCATGTAA  
AGTTACAAAAACAAATAGAAAGACCTACAAGGTCGAACAGCAAAATAAGGATCCAATTAAAGCCTTTTATGA  
AAACAGGGCCTACACACCTAGGAGTTTATCAGCACCTATATTTACTACTTCACCTTAACCTTTGTGGAGAAG  
GAAAGAGATTTTCAGAAAAATTAATCACGAAATGGCCAACGGTGGTAATCAGAATCTAAAGGTGGCGGATG  
AGGCGTTGAAGGTAGATGATTGTGACTGTCATCCTGAATTTTCACCACCATCAAGTCAGCCTCCAAAACA  
TAAAGGAAAACAAAATCTCGAAACAATGAATCAGAAAAGTTCAGTTCTAGTTACCACTTACCTTTACCA  
GCAGATTTGAAGAACATCTTGGAGAAACAGTTTTCTAAATCTCCAGAGCTGCACACCAGGATTTTGCTA  
ATATAATGAAAATGCTGAGAAGCTTAATTCAAGATGGCTATATGGCCTTATTGGAGCAGCGTTGCCGCAG  
CGCTGCACAGGCCTTTACAGAGTTGCTGAACGGTTTAGATCCTCAAAAAATAAAGCAATTGAACCTGGCC  
ATGATTAACCTATGTTTTGGTCTGCTATGACTTGGCATTCTCTCCTTGGGAATAGGACAGCCTGAGGAAT  
TATCTGAAGCCGAAAACAGTTTAAAGAGGATTATTGAACACTACCCCAAGTGAGGGCCTTGATTGCTTGGC  
CTACTGTGGAATTGGAAAAGTGATTGAAAAAACAAGATTCTAGAAGCTCTCAATCACTTTGAGAAA  
GCAAGAACCTTGATTATCTGCTTCTGAGTGTAACTTGGCCA

Human TTC3 mRNA sequence - var6 (public gi: 1304131) (SEQ ID NO: 207)

CCTAAAGAAAAGTATTAAGTAAATAGCAGTACAGATGGCAAAATGGATTGCACAATATATCCTCTGGATCC  
ATAGTGACCCTGCAGAGATAAACCTGTGATGGTCAAACAATGTGAAAACCTGCTGTGAGAGACATGGCGAG  
GGTGCTCTTGTTTACAGAGAAGAGGTGCAAAAATCAACTTGATGGTAGTGGGAAGATCAGGAAATGCTTC  
CTGAAATTGAGTATTAAAGACTAATAGACATTAGGTGGTTGCAGAATAAGTTTTGTTAGGAAGGACAAG  
CAGTTGGGTATGACTGGCTTCTAGGTTGTGTGTTGTGGAGTGAAGGATAAAAGCAGGAGCAAGATCA  
CAAAAGGTCTTCTATGCTTATATTAGGGAAGTTGGACTTTATTCTCAAGCTGAAGGGAAGCTGTTGCATG  
GTTTAAAGCAGTAAAGTGATATGATCAGAGTTTAGAGGATGCCAAGATTGAAGGCAAGCTGACCAAGTT  
AGGAGACTGCTTGTTAAATTAGTTTCAAGGAGAAAACAGTGAAGGCAGTGGCACTGGGCATGAAGAAGTAT  
ATGTGTGCTAATTTTAGATTTCTTAGGGAAGCAGAAATGACAAGAGTTAGTGGTCCATTGGACAGAATA  
TTGAAGGAGAGACTGGGGAGTCTAGGTTGACTCCAGGGTTTAGGTTGGGCAGTAAATGACATGTAGAAC  
AATTAAGTATAACAGCATAAGAGAGGAAAGAACTTCATTCATATGTTTGTGTTTGGAGAAAAGA  
TGTTTGTGTTTTGAACCTCTGATTGAGAGGGGCTTGTGGGACATCTTGGTTAAGATCCTGTAGTAGTTCT  
AGTAGGGTCTAGAAGTCAAGAGATACAACCCCGCCTGGAAGGATTGGGAGTCTTCAGCATTGGAATTT  
TGGAAGCCATTGTTTACTGCAGTGCATATGAGATAAATTTAACTGGTACATAGATAAACACTTGAAAAA  
TTTTAATAGATAGGAATTTAATGTGTATGAGAAACATAACTTGCACATCTAACCTTTGATAATCATGGAC  
ATTATCACTTAGGCCAAGTGAGCTCAATAAAAGGGAAATATTAATAAAATATATGTATACATGGAAA  
TGGCAAAAATCACGGTGAAGCTATGCAACCGATGCAAGTTGAGAAAAGTGTGTGTTAAGTCATGGGTGTG  
GTGGATAAATTACCCAAGGAGAGAGTAAGAGTGAGAAGAAAAGAGAGTTGACATTGGGTGGCGGGGAAT  
GGAGAAGAAGAACCCATGAAGGAACTGAGGAAGAGCAGCCAGACGAATAGGAGGAAAACAGGAGAAGA  
TGGTCTTTGGAGTCCAAATGAAGAGTTCTGAGGAGGAAGTGGTCCACAGCGTCAAACCTTGTGCACCATGG  
ACAATTTTGTGAGGGAGATTTCACTGTGGCGGATTATGCCTTGTAGAAGATTGCCCTCACGTGGATGA  
TTGTGTCTTTGCTGCTGAATTTATGAGCAATGATTATGTTTCGTGTGACTCAGCTTTACTGTGATGGGGTG  
GGTGTGCAATATAAAGATTATATCCAAAGTGAGAGGAATTTGGAATTTGACATCTGCAGTATATGTTGTA  
GTAAACCAATTTCTGTCTGCAAGATTATTGCGATGCCATTAAATAAACATCTTCTGGCCACTTCTGTT  
TCAACATCAAAACAGTTCCGTAATATCACGATTGCATCCCTGTGTGGACGCCAACAAATTCACGTGCTTCT  
GAGATAAATTTGAAGAACTACAACATCTTGAGTTGATGGAAGATATTGTGGATTTGGCAAAGAAAGTTG  
CTAATGATTCACTTCTTATGAGAGCTTATTGAGAATTGGTTGTAAAATAGAAAATAAAATCTTGGCAAT  
GGAAGAAGCTCTGAATTGGATAAAATATGCAGGCGATGTAACAATTTCAACTAAATTAGGATCAATTGAC  
AATGTTGGCCTATGTTAAGTATTTCTTTACTGAATACAAGTACCACATAACTAAATGTAAATGGAAG  
ACTGCAATTTGCTTGAAGAACTTAAACTCAAAGTTGTATGGATTGTATAGAGGAAGGAGAACTAATGAA  
AATGAAAGGAAATGAAGAGTTTTCCAAAGAAAGATTGATATAGCTATTATCTATTACACCAGAGCCATT  
GAATATAGACCTGAAAACCTACCTTCTTATGGTAACCGAGCTCTTGTCTTCTCGTACTGGACAGTTTA  
GAAATGCACTCGGTGATGGAAGAGAGCCACTATTCTGAAGAACCTTGGCCAAAGGGTCATTATCGTTA  
TTGTGATGCTCTTCTATGCTGGGGGAATATGACTGGGCCCTGCAAGCAAAACATAAAAGCTCAAAAACCTC  
TGTAAAAATGACCTGAGGGAATCAAGGATCTAATTTCAGCAGCATGTAAAGTTACAAAAACAAATAGAAAG  
ACCTACAAGGTGCAACAGCAAATAAGGATCCAATTAAGCCTTTTATGAAAACAGGGCCTACACACCTAG  
GAGTTTATCAGCACCTATATTACTACTTCACCTTAACCTTTGTGGAGAAGGAAAGAGATTCAGAAAAATT  
AATCACGAAATGGCCAACGGTGGTAATCAGAACTCAAGGTGGCGGATGAGGCGTTGAAGGTAGATGATT  
GTGACTGTCACTGAATTTTCAACCATCAAGTCAGCCTCCAAACATAAAGGAAAACAAAATCTCG  
AAACAAATGAATCAGAAAAGTTCAGTTCTAGTTCACTTACCTTACCAGCAGATTGGAAGAATCTTG  
GAGAAACAGTTTTCTAAATCTCCAGAGCTGCACACCAGGATTTTGCTAATATAATGAAAATGCTGAGAA  
GCTTAATTCAAGATGGCTATATGGCCTTATTGGAGCAGCGTTGCCGAGCGCTGCACAGGCCTTTACAGA  
GTTGCTGAACGGTTTAGATCCTCAAAAAATAAAGCAATTGAACCTGGCCATGATTAACCTATGTTTTGGTC  
GTCATGGAAGTTGCCATTTCTCTCTTGGAAATAGGACAGCCTGAGGAATTATCTGAAGCCGAAAACAGT  
TTAAGGAGATTATTGAACACTACCCAGTGAGGCGCTTGATTGCTTGGCCTACTGTGGAATTGAAAAGT  
GTATTTGAAAAAACAAGATTCTAGAAGCTCTCAATCACTTTGAGAAAAGCAAGAACCTTGATTATCGT  
CTTCTGAGTGTAACTTGGCCACAGTAATGTGATTATTGAAGAGTCTCAGCCACAAAAATAAAGA

Figure 36 part - 130

TGCTGTTAGAGAAATTTGTTGAAGAATGCAAGTTCCCTCCAGTGCCAGATGCCATTTGTTGCTATCAGAA  
GTGCCATGGATATTTCTAAGATCCAGATATACATACTGATCCAGACTTTAAGGGTTTTATACGCATCAGC  
TGTGGCCAGTACTGTAAATAGAAATTTACATGAATTTGCTGGAAGAAGTTAAAACTACAACCTTTAATG  
ATAAAATTGACAAGGATTTTCTACAAGGAATATGTCTTACCCCTGACTGTGAAGGTGTCATTTCTAAGAT  
TATCATCTTCAGCAGTGGTGGTGAAGTTAAATGTGAATTTGAACACAAGGTCATAAAAGAAAAGGTTCCCT  
CCAAGACCTATTTCTGAAACAGAAATGTTCTAGCCTAGAGAACTAAGACTGAAAGAAGACAAAAAATTGA  
AGAGAAAGATCCAAAAAAGAAGCAAAAAAGTTAGCACAGAAGAATGGAGGAGGACTTAAGAGAAAAG  
TAATCCACCCAAAAATGAAGAGCAGAAAGAACTGTAGACAATGTTACGCGTTGTCAGTTCCTTGTATGAC  
AGAATTTCTACAGTGTATAAAGCAGTATGCTGACAAGATTAAATCCGGCATAACAGAATACAGCCATGCTTC  
TCAAAGAATTGCTTTCTTGGAAAGTTTTGAGCACAGAAGACTATACAACCTGTTTTCTAGCAGAAATTT  
TCTAAATGAAGCAGTGGACTATGTTATTCGCCACTTGATTCAAGAAAATAACAGAGTAAAGACAAGAATA  
TTTCTGCATGTTTTGAGTGAGCTTAAAGAAGTGGAGCCCAATTAGCCGCTGGATCCAAAACTTAATA  
GCTTTGGCTTAGATGCCACAGGAACTTTCTTTCTCGTTATGGAGCATCTCTTAACTGCTTGTATTTAG  
TATCATGACTTTCTCTGGAATGAGAAATATGGTCAAACTAGACTCTATAGAAGGAAAGCAACTTGAT  
TATTTCTCTGAGCCAGCATCATTGAAGGAAGCCCGTTGTTTAAATATGGCTGCTAGAAGAACACAGAGACA  
AGTTCACAGCATTCATAGTGCTTTAGATGAATTTCTTGATATAATGGACAGCCGCTGTACTGTGTTAAG  
GAAACAAGATAGTGGTGAAGCACCCTTTAGTTCAACCAAGGTGAAAAACAAAGCAAGAAAAAGAAGCCA  
AAGGATTCAAAGCCTATGTTAGTTGGGTCTGGAACAACCTTCAGTAACCTCAAATAATGAGATCATCACTT  
CAAGTGAAGACCATAGCAATCGAAATTCAGATTCTGCAGGCCCATTTGCAGTGCCTGACCATCTTCGGCA  
AGATGTAGAAGAAATTCGAAGCTCTCTATGACCAACACAGTAACGAATATGTTGTCCGCAATAAGAAGCTA  
TGGGACATGAACCCAAAAACAAATGTTCAACTCTATATGATTACTTCTCTCAGTTTTTGGAGGAACATG  
GTCCTTTGGACATGAGTAAACAAGATGTTCTCTGCAGAAATATGAGTTTTTCCAGAAGAACTCGACAGAT  
ACTGAAAAAAGCAGGAGGTTTTAAACCTTTCTCTTGGGATGCCCTCGTTTTGTTGTGATTGACAACTGT  
ATTGCACTGAAGAAGGTTGCATCACGGCTCAAGAAAAAAGGAAGAAGAAAAACATTAACAACAAAGTAG  
AAGAAATTTCAAAGCAGGGGAGTATGTACGAGTTAACTACAACCTGAATCCAGCTGCTAGGGAATTTAA  
ACCAGATGTAAAGTCTAAACAGTGTGAGATTCTCTCAGCACCAGCTTTTGAATATGTGAAACCCAAA  
CCTGTGCTGCAAAATTTCTCCCAAGCCAGCTTGTGAAGATGTGAAGGCCAAACAGTATCCGACAATTTCTT  
CTAGACAAGTTTCTGAGGATGGGCAACCCAAAGGGCTCTCTTAATTCTCTAAACAGGCTCTGAGGA  
TGCAAAATTACAAGCGAGTCTCCTGTAATTTCCCCAAACCGGTTCTTGAGGATGTGAACCAACTTATTGG  
GCTCAATCCCATTGGTTCACAGGATACTGTACGTATCTTCTTTCCAGAGATTTGATATCACCCAGACAC  
CGCCAGCATACATAAACGTGTTACCAAGGTTTGCCCCAGTACACCAGCATATATACACCCTTGGCCAGCCT  
TTCTCCTGAATATCAGCTACCAAGATCAGTACCAGTGGTGCCGTCTTTTGTAGCCAATGACAGAGCAGAT  
AAAAATGCTGCTGCCTATTTTGGAGGTCATCATTGAAATGCTGAGAATGTTGCTGGTCACCAGATTGCCT  
CTGAAACACAGATCCTTGGAGGCTCTTTGGGAATATCTGTAAAGTCACACTGCAGCACAGGTGATGCTCA  
TACAGTCTGTAGTGAAGTCTAACAGAAATGATGAGCACTGTGGAATTTCTAACAAACAAATGTGAAGTAATT  
CCAGAAAGCACCAGTGCAGTAACAAACATTTCCACACGTGCAGATGGTTGCCATACAGGTATCTTGAACA  
TAATACACCAAGAAGTCAATACTGAGCCATATAATCCTTTTGGAGAACGACAAGGGGAAATTTACCGGAT  
TGAAAAGGAGCACCAAGTATTACAAGACCAACTTCAAGAAGTGTATGAAAATTATGAGCAGATAAAACTT  
AAGGGCTTAGAAGAGACAGGGACCTGGAAGAGAAGTTGAAAAGGCACTTAGAAGAAAAACAAGATCTCAA  
AGACGGAATTAGATTGGTTCTTCAAGATTTGGAAGAGAAATTAATAATGGCAACAGGAAAAAAGGA  
AATCCAAGAAAGACTAAATCACTGAAGAAGAAATTAATAAGGTTTCAAATGCCAGTGAAATGTATACC  
CAGAAAAATGATGGAAGGAAAAGGAACATGAATTACATCTGGATCAGTCCCTTGAAATCAGCAACACAC  
TTACAAATGAGAAATGAAAATAGAAGAGTATATAAGAAAGGGAAGAGGATTATGAAGAGAGTCATCA  
GAGAGCTGTGGCTGCAGAGGTATCCGTACTTTGAAAACCTGGAAGGAGAGTGAAGTGTATAAGCTACAGATC  
ATGGAGTCAACAAGCAGAAGCCTTTCTGAAGAAGCTGGGGCTGATTAGCCGTGATCCTGCAGCATATCCTG  
ACATGGAGTCTGATATACGTTTATGGGAATTGTTTCTTCTAATGTTACAAAAGAAATTGAGAAAGCAAA  
GTCTCAGTTTGAAGAACAATTAAGGCAATTAATAATGGTTCTCGGCTCAGTGAACCTTTCTAAAGTGCAG  
ATTTCTGAGCTTTCAATTTCTGCTGTAAACAGGTTTATCCCGAGTTACTCCCTGAGTCTTCAGGCCACG  
ATGGCCAAAGGGCTTGTGACTTCTGCAAGCGACGTGACTGGAAACCACGCACTTCACAGGGATCCTAG  
TGTGTTCTCTGCTGGTGAATTTCCCAAGGGGAGGCTCCTTCTGCGCTGTTGCCAGGGCCACCCCTGGTTCAG  
CCTGAAGCCACTCAGCTGACAGGGCCAAACCGGGCTGGCCAGGCAGCTCTGTGAGAACGAAGCCCTGTGG  
CTGATCGGAAGCAGCCTGTTCTCCAGGACGTGCTGCGCGTTCAAGCCAGTCTCCAAAAAAGCCGTTCAA  
TAGTATTATTGAGCACCTGTGAGTGGTATTCCCATGTTACAACAGCACTGAGCTTGCTGGTTTTATTAAA  
AAAGTGCGAAGCAAAAAACAAGAACTCACTCTCAGGATTGAGTATTGATGAAATTGTCCAAAGAGTGCCAG  
AACACATTCTAGATGAACAGAAAAAGAAAAAGCCAAACCCAGGAAAGGACAAGAGGACTTATGAGGCCAG  
CTCTGCCACCCCGTGACCAGGTCTCTCCAGGGCTCACCTCGGTGGTTGTTGCACCATCACCCAAAACC  
AAGGGGAGAAAGCAGAAGATGTCCCTGTGAGGATGCACTGGGTGCAAGTTCTCTGTGAAATATGCCACG  
AGGTGTTCAAATCAAAAAACGTGCGTGTGCTCAATGTGGGCACAAGTATCACAAGGGTGCTTTAAGCA  
GTGGCTTAAAGGGCAGAGCGCTTGCCCGGCTGCAAGGCTGATCTCTGACAGAAGAGTCACTTCT  
GGAAGAGGCTGGCCAGTCAGAATCAGGAGCTGCCCTTCTGCTCTTCTAGGTAGTCACACTTCACTAAAG  
TGTCATCCACAGTGTGTTGAATCCGAAGAATGACAATTTTCTACCACTGGTGTAAAAAACAACATTTG  
AAGACCTTGTGCAATGTGTGTACAAAGCTAAATACATGGAATCGTTAATATCGCTGATATTAAGTAA  
TTTCCCACTCTGAGTGAATACTTTGATGATTGCCAACAGTGGCTAATAAAATGACGGCTACCACTCA

Figure 36 part - 131

TGGGCTCACTGGGCTGCGCAGGGCTCTTTGAGGTGGGTGGCTTCTTTTGGAAAGTACTATGAACGCTCTCGA  
 AGCAGTATTCTAGTGATAAGAATTCTTAACATAGCCAAGCGCCCCACGTTTGTTCACGTTTGTTCAC  
 CTTTCTGTTTGAACAACTGTTCTGGTAGCTCCACAAGAGAGATGATACTGACTTTTAAATTTTTTAC  
 AAGAGTCTGTATTCCTGATATGCCTATATTTTCTCAAAGATTCTGCATTTTAAGGATGGGCATAAGCA  
 AACTATATTTTAATAATTTATAGTTAATGTTAAATATTGGCTGATTAGACCAAAAGATTCAAATCTCC  
 TCTTTGTGAAATCCCATCTGCATTTGATTTTTTATTATTTTATGTTCCCCCGTTAGATTGTTTTAAGTGT  
 TTGCTTTTCATCTTTTATAGATGTAATCTGATTTTCAAAAATCATTAAACACTTTTAAATTAGTATCGACT  
 AAGACTTTTTCCCCCTGGAATCGAGGCTGTGTGTCCGTCATCCAGCCCCCGGTTGGAGCCTGCTCTTTG  
 AACTCCGCTGCCTTCCTTAGCAGCTTCTGTCTCTTCTGTGAGTCAGTCAGCGAGTGTGGGATCCGCA  
 TCCAGCCGTGCTGAGCACACAACAGGCTGTGTGTGGAAATGGCCACCACCATTCCTCTCCCCACCCAC  
 CAAAAAGAGAAGCTGTGTCTTTAGACAACCCCTGAGGTATCTGTGTTACAATCGTTCTGTGTTTGATAT  
 TTGTGTAAGTATGCATGCACTCTGTACTGTGACCTAAGAACAAAACCTGTAACGATTAGAAACCATG  
 AAAAAATTAGATATGTTTTGTGACTTTTGTAGACAGTGGTAAATATAGAACCATGAATTCGGTCACATTC  
 CATTCTCTCCAACATGAAGGATCAAAAAATGTTTTCAATGTGTTCTTTGTTCCACTGGGAACTTAGA  
 GTCATGAGTTTATGAGGCTGGATTGTTGGGCACCTTTCCTTTGCCTTTGGTTCACTGTGAGTTCTGATGTCC  
 TAGTGACTTAGGTCTTAGAAGCTCAGCCTTAGTTTGAACAGATTCTCCACGGTGGTCCCCAAAACACT  
 GTCTGCATATCCATAAGAATTGAACGCTATGGGTGTTAAGTGCATGAGGATCAGTTTGCAGCAGCAAGT  
 ACAAAGAGAAGAGGAACATCCGTTGAATGAGTGTGTTTTGTACATAACTTCAGATACTTGTGAACATG  
 CCTATATTTGTCCAACAACACTGTGAGAATAAAGAACATTCTAAATGAG

Human TTC3 Protein sequence - var1 (public gi: 2662364) (SEQ ID NO: 308)

IKINIFWPLLFOHQNSSVISRLHPCVDANNSRASEINLKKLQHLELMEDIVDLAKKVANDSFLIGGLLRI  
 GCKIENKILAMEEALNWKYAGDVTILTKLGSIDNCWPMLSIFFTEYKYHITKIVMEDCNLLEELKTQSC  
 MDCIEEGELMKMGNEEFSEKRFDAIIYYTRAIEYRPENYLLYGNRALCFLRTGQFRNALGDGKRATIL  
 KNTWPKGHYRYCDALSMLGEYDVALQANIKAKQLCKNDPEGIKDLIQHVKLQKQIEDLQGRANKDPIK  
 AFYENRAYTPRSLSAPIFTTSLNFVEKERDFRKHINHEMANGGNQNLKVADEALKVDDCDCHPEFSPSSQ  
 PPKHKGKQKSRNNESEKFSSSSPLTLPADLKNILEKQFSKSSRAAHQDFANIMKMLRSLIPDGYMALLEQ  
 RCRSAAQAFTELLNGLDPQKIKQLNLAMINYVLVYGLAISLLGIGQPEELSEAENQFKRIIEHYPSGL  
 DCLAYCGIGKQVYLKKNRFLALNHFEKARTLIYRLPGVLTWPTSNVIEESQPKIKMLLEKFVEECKFP  
 PVPDAICCYQKCHGYSKIQIYITDPDFKGFIRISCCQYCKIEFHMNCWKKLKTTFNDKIDKDFLQICL  
 TPDCEGVISKIIFSSGGEVKCEFEHKVIEKVPVPRPILKQKCSSLEKLRLKEDKKLKRKIQKEAKKLA  
 QERMEEDLRESNPPKNEEQKETVDNVQRCQFLDDRILQCIKQYADKIKSGIQNTATLLKELLSWKVLSTE  
 DYTTCFSSRNFLNEAVDYVIRHLIQENNRVKTRIFLHVLSELKEVEPKLAAWIQKLNSFGLDATGTFFSR  
 YGASLKLLDFSIMTFLWNEKYGHKLDSEIGKQLDYFSEPALEKARCLIWLEEHDRKFPALHSALDEFF  
 DIMDSRCTVLRKQDSGEAPFSTKVKNKSKKKPKDCKPMLVSGTTSVTSNNEIITSSDHNSNRNSDSA  
 GPFAVPDHLRQDVVEFEALYDQHSNEYVVRNKKLWDMNPQKQKSTLYDYFSQFLEEHGPLDMSNKMPSAE  
 YEFFPEETRIIEKAGGLKPFLLGCPRFVVIDNCIALKKVASRLKKRKKKKNIKTKVEEISKAGEYVRVK  
 LQLNPAAAREFPDVKSKPVSDDSSAPAFENVKPKPVSANSPKPCEDVKAKPVSNDSSRQVSEDGQPKGV  
 SSNSPKGSEDANYKRVSCNSPKPVLEDVKPTYWAQSHLVGTGYCTYLPFQRFDTQTPPAYINVLPLGLPQ  
 YTSIYTPLASLSPEYQLPRSPVVPVPSFVANDRADKNAAAYFEGHHLNAENVAGHQIASETQILEGSLGIS  
 VKSHCSTGDAHTVLSSENRNDEHCGNSNNKCEVIPESTSAVTNIPHVQMVAIQVSWNIHQEVNTEPYNP  
 FEERQGEISRIEKEHQVLQDQLQEVYENYEQIKLKGLEETRDLEEKLRHLEENKISKTELDWFLQDLER  
 EIKKWQEQEKEIQERLKSLLKKIKKVSNASEMYTQKNDGKEKEHEHLHLDQSLEISNTLTNEKMKIEEYIK  
 KGKEDYEESHQRAVAEVSLENWKESEVYKQIMESQAEAFLLKGLISRDPAAYPDMESEDIRSWELFL  
 SNVTKVIEKAKSQFEEQIKAIKNGSRLSELSKVQISELSFPACNTVHPELLPESSGDDGQGLVTSASDVT  
 GNHAALHRDPSVFSAGDSPGEAPSALLPGPPPGQPEATQLTGPKRAGQAALSERSPVTDKQPVPPGAA  
 RSSQSPKPKFNSIIIEHLSVVFPCYNSTELAGFIKKVRSKNKNSLSGLSIDEIVQRVTEHILDEQKKKKPN  
 PGKDKRTYEPSSATPVTRSSQGSPPSVVAPSPKTKGQKAEDVPVRIALGASSCEICHEVFKSKNVRVLKC  
 GHKYHKGCFKQWLKQGSACPACQGRDLLTEESPSGRGWPSQNLQELPSCSSR

Human TTC3 Protein sequence - var2 (public gi: 1632766) (SEQ ID NO: 309)

MLGEYDVALQANIKAKQLCKNDPEGIKDLIQHVKLQKQIEDLQGRANKDPIKAFYENRAYTPRSLSAP  
 IFTTSLNFVEKERDFRKHINHEMANGGNQNLKVADEALKVDDCDCHPEFSPSSQPPKHKGKQKSRNNESE  
 KFSSSSPLTLPADLKNILEKQFSKSSRAAHQDFANIMKMLRSLIQDGYMALLEQRCRSAAQAFTELLNGL  
 DPQKIKQLNLAMINYVLVYGLAISLLGIGQPEELSEAENQFKRIIEHYPSGLDCLAYCGIGKQVYLKKN  
 RFLALNHFEKARTLIYRLPGVLTWPTSNVIEESQPKIKMLLEKFVEECKFPVPDAICCYQKCHGYS  
 KIQIYITDPDFKGFIRISCCQYCKIEFHMNCWKKLKTTFNDKIDKDFLQICLTPDCEGVISKIIFSS  
 GGEVKCEFEHKVIEKVPVPRPILKQKCSSLEKLRLKEDKKLKRKIQKEAKKLAQERMEEDLRESNPPKN  
 EEQKETVDNVQRCQFLDDRILQCIKQYADKIKSGIQNTAMLLKELLSWKVLSTEDYTTCFSSRNFLNEAV  
 DYVIRHLIQENNRVKTRIFLHVLSELKEVEPKLAAWIQKLNSFGLDATGTFFSRYGASLKLLDFSIMTFL  
 WNEKYGHKLDSEIGKQLDYFSEPALEKARCLIWLEEHDRKFPALHSALDEFFDIMDSRCTVLRKQDSG  
 EAPFSSSTKVKNKSKKKPKDCKPMLVSGTTSVTSNNEIITSSDHNSNRNSDSAGPFAVPDHLRQDVVEF

Figure 36 part - 132

EALYDQHSNEYVVRNKKLWDMNPKQKQCSTLYDYFSQFLEEHPDMSNMKMFSAEYEFFPEETRQILEKAG  
GLKPFLLGCPFRFVIDNCIALKKVASRLKKRKKKNIKTKVEEISKAGEYVRVKLQLNPAAREFKPDVKS  
KPVSDSSAPAFENVKPKPVSANSKPKACEDVKAKPVSNDSSRQVSEDGQPKGVSSNSPKPGSEDANYKR  
VSCNSPKPVLEDVKPTYWAQSHLVTGYCTYLPFORFDITQTPPAYINVLPGLPQYTSIYTPLASLSPEYQ  
LPRSPVPVPSFVANDRADKNAAAYFEGHHLNAENVAGHQIASETQILEGSLGISVKSHCSTGDAHTVLSE  
SNRNDHECGNSNNKCEVIPESTSAVTNI PHVQMVAIQVSWNI IHQEVNTEPYNPFEEERQGEISRIEKEHQ  
VLQDQLQEVYENYEQIKLKGLEETRDLEELKRHLLENKISKTELDWFLQDLEREIKKWQOEKKEIQERL  
KSLKKKIKKVSNASEMYTQKNDGKEKEHEHLHDQSLEISNTLTNEKMKIEEYIKKGKEDYEESHQRAVAA  
EVSLENWKESEVYKLQIMESQAEAFLLKGLISRDPAAAYPDMESDIRSWELFLSNVTKEIEKAKSQFEE  
QIKAIKNGSRLSELSKVQISELSFPACNTVHPELLPESSGHGQGLVTSASDVTGNHAALHRDPSVFSAG  
DSPGEAPSALLPGPPPQPEATQLTGPKRAGQAALSERSPVADRKPQVPPGRAARSSQSPKKPFNSIIIEH  
LSVFPFCYNSTELAGFIKKVRSKNKNSLSGLSIDEIVQRVTEHILDEQKKKKPNPGKDKRTYEPSSATPV  
TRSSQGSPPSVVAPSPKTKGQKAEDVPVRIALGASSCEICHEVFKSKNVRVLKCGHKYHKGCFFKQWLKGQ  
SACPACQGRDLLTEESPSGRGWPSQNLQELPSCSSR

Human TTC3 Protein sequence - var3 (public gi: 1632764) (SEQ ID NO: 310)

MKMKGNEEFSKERFDIAIIYYTRAIEYRPNYLLYGNRALCFLRTGQFRNALGDGKRATILKNTWPKGHY  
RYCDALSMLGEYDVALQANIKAQKLCCKNDPEGIKDLIQHVKLQKQIEDLQGRANKDPIKAFYENRAYT  
PRLSAPIFTTSLNFVEKERDFRKNHEMANGGNQNLKVADEALKVDDCDCHPEFSPSSQPPKHKGKQK  
SRNNESEKFSSSSPLTLPADLKNILEKQFSKSSRAAHQDFANIMKMLRSLIQDGYMALLEQRCRSAQAQF  
TELLNGLDPQIKQLNLAMINYVLVYGLAISLLGIGQPEELSEAENQFKRIIEHYPSGLDCLAYCGIG  
KVYLKKNRFLFALNHFEKARTLIYRLPGVLTWPTSNVIEESQPKIKMLLEKFVEECKFPVPDAICCY  
QKCHGYSKIQIYITDPDFKGFIRISCCQYCKIEFHMNCWKKLKTTFNDKIDKDFLQIGICLTPDCEGVIS  
KIIIFSSGGEVKCEFEHKVKEKVPPIKQKSSLEKLRLKEDKKLKRKIQKKEAKKLAQERMEEDLR  
ESNPPKNEEQKETVDNVQRCQFLDDRILQCIKQYADKIKSGIQNTAMLLKELLSWKVLSTEDYTCFSSR  
NFLNEAVDYVIRHLIQENNRVKTRIFLHVLSELKEVEPKLAAWIQKLSNFGLDATGTFSSRYGASLKLDD  
FSIMTFLWNEKYGHKLDSEIGKQLDYFSEPAASKEARCLIWLLLEHRDKFPALHSALDEFFDIMDSRCTV  
LRKQDSGEAPFSSTKVKNKSKKKKPKDSKPMVLGSGTTSVTSNNEIITSSSEDHSNRNSDSAGPFAVPDHL  
RQDVEEFALYDQHSNEYVVRNKKLWDMNPKQKQCSTLYDYFSQFLEEHPDMSNMKMFSAEYEFFPEETR  
QILEKAGGLKPFLLGCPFRFVIDNCIALKKVASRLKKRKKKNIKTKVEEISKAGEYVRVKLQLNPAARE  
FKPDVKS KPVSDSSAPAFENVKPKPVSANSKPKACEDVKAKPVSNDSSRQVSEDGQPKGVSSNSPKPGS  
EDANYKRVSCNSPKPVLEDVKPTYWAQSHLVTGYCTYLPFORFDITQTPPAYINVLPGLPQYTSIYTPLA  
SLSPEYQLPRSPVPVPSFVANDRADKNAAAYFEGHHLNAENVAGHQIASETQILEGSLGISVKSHCSTGD  
AHTVLSESNRNDHECGNSNNKCEVIPESTSAVTNI PHVQMVAIQVSWNI IHQEVNTEPYNPFEEERQGEIS  
RIEKEHQVLQDQLQEVYENYEQIKLKGLEETRDLEELKRHLLENKISKTELDWFLQDLEREIKKWQOEK  
KEIQERLKSLLKKKIKKVSNASEMYTQKNDGKEKEHEHLHDQSLEISNTLTNEKMKIEEYIKKGKEDYEES  
HQRAVAAEVSLENWKESEVYKLQIMESQAEAFLLKGLISRDPAAAYPDMESDIRSWELFLSNVTKEIEK  
AKSQFEEQIKAIKNGSRLSELSKVQISELSFPACNTVHPELLPESSGHGQGLVTSASDVTGNHAALHRD  
PSVFSAGDSPGEAPSALLPGPPPQPEATQLTGPKRAGQAALSERSPVADRKPQVPPGRAARSSQSPKKP  
FNSIIIEHLSVFPFCYNSTELAGFIKKVRSKNKNSLSGLSIDEIVQRVTEHILDEQKKKKPNPGKDKRTYEP  
PSSATPVTRSSQGSPPSVVAPSPKTKGQKAEDVPVRIALGASSCEICHEVFKSKNVRVLKCGHKYHKGCFF  
KQWLKGQSACPACQGRDLLTEESPSGRGWPSQNLQELPSCSSR

Human TTC3 Protein sequence - var4 (public gi: 1632762) (SEQ ID NO: 311)

MDNFAEGDFTVADYALLEDCPHVDDCVFAAEFMSNDYVRVTQLYCDGVGVQYKDYIQSERNLEFDICSIW  
CSKPISVLQDYCDAIKINIFWPLLFQHQNSSVISRLHPCVDANNSRASEINLKKLQHLLELMEDIVDLAKK  
VANDSFLIGLLRIGCKIENKILAMEEALNWIYAGDVTILTKLGSIDNCWPMLSIFTEYKYHITKIVM  
EDCNLLEELKTQSCMDCIEGELMKMKGNEEFSKERFDIAIIYYTRAIEYRPNYLLYGNRALCFLRTGQ  
FRNALGDGKRATILKNTWPKGHYRYCDALSMLGEYDVALQANIKAQKLCCKNDPEGIKDLIQHVKLQKQI  
EDLQGRANKDPIKAFYENRAYTTPRSLAPIFTTSLNFVEKERDFRKNHEMANGGNQNLKVADEALKVD  
DCDCHPEFSPSSQPPKHKGKQKSRNNESEKFSSSSPLTLPADLKNILEKQFSKSSRAAHQDFANIMKML  
RSLIQDGYMALLEQRCRSAQAQFTELLNGLDPQIKQLNLAMINYVLVYGLAISLLGIGQPEELSEAEN  
QFKRIIEHYPSGLDCLAYCGIGKVYLKKNRFLFALNHFEKARTLIYRLPGVLTWPTSNVIEESQPKIK  
MLLEKFVEECKFPVPDAICCYQKCHGYSKIQIYITDPDFKGFIRISCCQYCKIEFHMNCWKKLKTTF  
NDKIDKDFLQIGICLTPDCEGVISKIIIFSSGGEVKCEFEHKVKEKVPPIKQKSSLEKLRLKEDKK  
LKRKIQKKEAKKLAQERMEEDLRNPPKNEEQKETVDNVQRCQFLDDRILQCIKQYADKIKSGIQNTAM  
LLKELLSWKVLSTEDYTCFSSRNFLNEAVDYVIRHLIQENNRVKTRIFLHVLSELKEVEPKLAAWIQK  
NSFGLDATGTFSSRYGASLKLDDFSIMTFLWNEKYGHKLDSEIGKQLDYFSEPAASKEARCLIWLLLEHR  
DKFPALHSALDEFFDIMDSRCTVLRKQDSGEAPFSSTKVKNKSKKKKPKDSKPMVLGSGTTSVTSNNEI  
TSSSEDHSNRNSDSAGPFAVPDHLRQDVEEFALYDQHSNEYVVRNKKLWDMNPKQKQCSTLYDYFSQFLEE  
HGPLDMSNMKMFSAEYEFFPEETRQILEKAGGLKPFLLGCPFRFVIDNCIALKKVASRLKKRKKKNIKTK  
VEEISKAGEYVRVKLQLNPAAREFKPDVKS KPVSDSSAPAFENVKPKPVSANSKPKACEDVKAKPVSND

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SSRQVSEDGQPKGVSSNSPKPGSEDANYKRVSCNSPKPVLEDVKPTYWAQSHLVTGYCTYLPFORFEDITQ  
TPPAYINVLPGLPQYTSIYTPLASLSPEYQLPRSVFVPSFVANDRADKNAAAYFEGHHLNAENVAGHQI  
ASETQILEGLSLGISVKSHCSTGDAHTVLSESNRNDHEHCNSNNKCEVPESTSAVTNIPHVQMVAIQVSW  
NI IHQEVNTEPYNPFEEERQGEISRIEKEHQVLQDQLQEVYENYEQIKLKGLEETRDLEEKLRHLEENKI  
SKTELDWFLQDLEREIKKWQKEKKEIQERLKSLLKKIKKVSNASEMYTQKNDGKEKEHEHLHDQSLEISN  
TLTNEKMKIEEYIKKGKEDYEESHQRAVAEVSLENWKESEVYKLQIMESQAEAFLLKGLISRDPAAAY  
PDMESDIRSWELFLSNVTKEIEKAKSQFEEQIKAIKNGSRLSELSKVQISELSFPACNTVHPELLPESSG  
HDGQGLVTSASDVTGNHAALHRDPSVFSAGDSPGEAPSALLPGPPPGQPEATQLTGPKRAGQAALSERSP  
VADRKQPVPPGRAARSSQSPKPFNSII EHL SVVPFCYNSTELAGFIKKVRSKNKNSLSGLSIDEIVQRV  
TEHILDEQKKKKPNPGKDKRTYEPSSATPVTRSSQGSPPVVVAPSPKTKGQKAEDVPVRIALGASSCEIC  
HEVFKSKNVRVLKCGHKYHKGCFKQWLKGQSACFACQGRDLLTEESPSGRGWPSQNOELPSCSSR

Human TTC3 Protein sequence - var5 (public gi: 2969903) (SEQ ID NO: 312)

DLKKLQHLLELMEDIVDLARKVANDSFLIGLLRIGCKIENKILAMEEALNWIKYAGDVITILTKLGSIDNC  
WPMLSIFFTEYKYHITKIVMEDCNLLEELKTQSCMDCEEGGLMKMGNEEFSKERFDIAIIYYTRAIEY  
RPENYLLYGNRALCFPRGTQFRNALGDGKRATILKNTWPKGHYRYCDALSMLGEYDWAQANIKAKLCK  
NDPEGIKDLIQHVKLQKQIEDLQGRANKDPIKAFYENRAYTPRSLSAPIFTTSLNFVEKERDFRKINH  
EMANGGNQNLKVADKALVDDCDCHPEFSPSSQPPKHGKQKSRNNESEKFSSSSPLTLPADLKNILEK  
QFSKSSRAAHQDFANIMKMLRSLIQDGYMALLEQRCRSAAQAFTELLNGLDPQKIKQLNLMAMINYVLVY  
GLAISLLGIGQPEELSEAENQFKRIIEHYHYPSEGLDCLAYCGIGKVYLKKNRFLALNHFEKARTLIYRLP  
GVLTWP

Unigene Name: UBE2N Unigene ID: Hs.458359

Human UBE2N mRNA sequence - var1 (public gi: 37577134) (SEQ ID NO: 208)

CGCGCGCGCAGTCGCGCGCGGGTCTGTCCTGACACCGTCGCGGGCAGGCTCGGCCACGAGCGCCAGAGC  
CCCGCGCCTCCCCTCGCGGCCTGTCCCAAGTCCCTGCCCCGCAACAGAGCGTCACTTCCGCCATCCCCGG  
CAGCGGTTGGGGCGGGCGCAGGGGAGGGGCGCAGGTGCGAGGGAAGCCCGCCGTGCGCCAGCCCGC  
GCCCCAGCAGGGACTACATTTCCCGAGGGGCTCGGCGGCGGCTGCGGCGACGGGCGCGGCAACGTCCTCC  
CGGAAGTGGAGCCCGGACTTCCACTCGTGCCTGAGGCGAGAGGAGCCGGAGACGAGACCAGAGGCCGAA  
CTCGGGTCTGACAAAGATGGCCGGGCTGCCCCGCGAGGATCATCAAGGAAACCCAGCGTTTGTCTGGCAGAA  
CCAGTCTCTGGCATCAAAGCCGAACCAGATGAGAGCAACGCCCGTTATTTTCATGTGGTCATTGCTGCCC  
CTCAGGATTCCCCCTTTGAGGGAGGGACTTTTAAACTTGAAGTATTCCTTCCAGAAGAATACCCAATGGC  
AGCCCCATAAGTACGTTTTCATGACCAAAATTTATCATCTAATGTAGACAAGTTGGGAAGAATATGTTTA  
GATATTTTGAAGATAAGTGGTCCCAGCACTGCAGATCCGCACAGTTCTGCTATCGATCCAGGCCCTTGT  
TAAGTGCTCCCAATCCAGATGATCCATTAGCAAATGATGTAGCGGAGCAGTGAAGACCAACGAAGCCCA  
AGCCATAGAAACAGCTAGAGCATGGACTAGGCTATATGCCATGAATAATATTTAAATGATACGATCATC  
AAGTGTGCATCACTTCTCTGTTCTGCCAAGACTTCTCTCTTGTGTTTGCATTTAATGGACACAGTCTT  
AGAAACATTACAGAATAAAAAAGCCAGACATCTTCACTCTTGGTGATTAAATGCACATTAGCAAAATC  
TATGTCTTGTCTGATTCACTGTCTATAAAGCATGAGCAGAGGCTAGAAGTATCATCTGGATTGTTGTGAA  
ACGTTTAAAGCAGTGGCCCCCTCCTGCTTTTATTCATTTCCCCCATCCTGGTTAAGTATAAAGCACTG  
TGAATGAAGGTAGTTGTGAGTTAGCTGCAGGGGTGTGGGTGTTTTATTTTATTTTATTTTATTTTATT  
TTTGAGGGGGAGGTAGTTTAAATTTATGGGCTCCTTTCCCCCTTTTTTGGTGATCTAATTGCATTGGTT  
AAAAGCAGCTAACAGGTCTTTAGAATATGCTCTAGCCAAAGTCTAATTTATTTAGACGCTGTAGATGGA  
CAAGCTTGATTGTTGGAACCAAAATGGGAACATTAAACAAACATCACAGCCCTCACTAATAACATTGCTG  
TCAAGTGTAGATTCCCCCTTCAAAAAAGCTTGTGACCATTTTGTATGGCTGTCTGGAACTTCTGTGA  
AATCTTATGTTTATGATAAATATTTTGTGTTATCTACTTTGCCTTTGTACAGTTTATTTTACTGTGTTT  
ATTTCAATTTCCCAATTTGACAATCGTATTTTAAATTTGAACTGATGGAACATTCTTTCTTGGTCTTCA  
CCATCTGACAAATTTAATGGCAAGAGGTGATTGTGCCAGTTTCTTTCACTGATGCAGATTGTGTTAA  
GATAGTACTGAATGGAGTATTTATAAACTGGCCCTGAGCATGCATAAAGCATCAGTATCTGACCTTTTTT  
TAACCTTCTAGGAATTTGAAATAAATGTGTTGTGTTGTCTGATTAGATGATCATTGGTGTCTTGCCACA  
ATGTTTAAAAATTACTGTACAGGAAAGTCACAGCAAAGATAGCAGTTGTGACTGACATGTAGGACTTTCA  
CAGTTGTGCCACATTTTGGCTAAATTTGGGTATGACATTTTCTTGGTCTTATCTGAAAATTTTCAT  
CTGTAACCTTTTCATGTGTGTTAAGAAACACTGATCTGATCATTTGGGATTGTCTGAGGCATTTGTGAGTC  
TTCCTTATAAACCTGATGAGCAGATCTCAACTATCTAGCTTGTGTGTCATCAGAAAGGTTTATCCCTTTG  
AGAGTATCAAGTCTCAGTTAATGATTCTTGCTTTTCATCCCTCCAGTATTTGCTGTGGGAGCTCGTTTTA  
TTCCTTAAATTTGGAATTCAGTAATTTTCTTCTTTATTGACGAATCTCTCCCTCACAAAAGTGTCTTT  
CCACCTCTCTCCATATCTAATCTCTGATTCTTGTTATTTTAAAGTCATAAATGTAGCCAGTCATAAATA  
CATAAATGTTAACCTTCGGGTGCAACCTTGTCTCTTGCAAGTTAAGGTAATGGATATTGTAGCCCATTT  
GAATTTTCTTCACTCTTATCTCGTAATCTGGAGTTTCTTCAGATTGTGGTGTATTTTATTTGTGCTCCT  
ATGTAAGATGAAGAATTAACATTAAATTAACATTTTCAACATACAAAAGCTTTTGTGACTGGTAAGT  
GTATCCTTCCAAATAAATGCATTGCTTGGTAAAAA

Figure 36 part - 134

Human UBE2N protein sequence - var1 (public gi: 4507793) (SEQ ID NO: 313)  
 MAGLPRIIRIKETQRLLEPVPVGIKAEPDESNAFYFHVVIAGPQDSPFEGGTFKLELFLPEEYPMAAPKVR  
 FMTKIYHPNVDKLGRIKLDILKDKWSPALQIRTVLLSIQALLSAPNPDDPLANDVAEQWKTNEAQAIETA  
 RAWTRLYAMNNI

Human UBE2N pray sequence - var1 (SEQ ID NO: 209)

GCCGCCATGGNGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACC  
 CAAGCAGTGGTATCAACGCAGAGTGGCCGAACCTCGGGTTCTGACAAGATGGCCGGGCTGCCCGCAGGAT  
 CATCAAGGAAACCCAGCGTTTGGCTGGCAGAACAGTTCCTGGCATCAAAGCCGAACAGATGAGAGCAAC  
 GCCCGTTATTTTCATGTGGTCATTGCTGGCCCTCAGGATTCCTCCCTTTGAGGGAGGGACTTTTAACTTG  
 AACTATTCCTTCCAGAAGAATACCAATGGCAGCCCCCTAAAATAAGTGGTCCCCAGCACTGCAGATCCGC  
 ACAGTTCGTCTATCGATCCAGGCCTGTTAAGTGCTCCCAATCCAGATGATCCATTAGCAAATGATGTAG  
 CGGAGCAGTGGAGACCAACGAAGCCCAAGCCATAGAAAACAGCTAGAGCATGGACTAGGCTATATGCCAT  
 GAATAATATTTAAATTGATACGATCATCAAGTGTGCATCACTTCTCCTGTTCTGCCAAGACTTCTCCTC  
 TTTGTTTGCATTTAATGGACACAGTCTTAGAAACATTACAGAATAAAAAANCCCCAGACATCTTCAGTCTT  
 TNGGTGATTAAATGCACATTANCAATNTTGGCCTGTCTGATNNCTGNCNTAANCNTGANCCNAGGCTN  
 AAATTTNATCTGGATNNTNGGAAACNTTNAACNNGGGCCCCNCCNGCTTTNTTNTATTNCCCCANCCGG  
 NTNAANTTAAACCCNGGAATNANGNNTTTNCNGNACNNNGGGGGT

Human UBE2N pray sequence - var2 (SEQ ID NO: 210)

CGAGCGCCCGCTGGNNTACCCATACGACGTACCAGNATTACGCTCATATGGCCATGGNAGGCCAGTGAAT  
 TCCACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCCGGGGGAGAGGAGCCGGAGACGAGACCA  
 GAGGCCGAACCTCGGGTTCTGACAAGATGGCCGGGCTGCCCGCAGGATCATCAAGGAAACCCAGCGTTTG  
 CTGGCAGAACAGTTCCTGGCATCAAAGCCGAACAGATGAGAGCAACGCCCGTTATTTTCATGTGGTCA  
 TTGCTGGCCCTCAGGATTCCTCCCTTTGAGGGAGGGACTTTTAACTTGAAGTATTCCTTCCAGAAGAATA  
 CCCAATGGCAGCCCCCTAAAGTACGTTTCATGACCAAATTTATCATCTAATGTAGACAAGTTGGGAAGA  
 ATATGTTTAGATATTTTGAAGATAAGTGGTCCCCAGCACTGCAGATCCGCACAGTTCGTCTATCGATCC  
 AGGCTTGTGTTAAGTGCTCCCAATCCAGATGATCCATTAGCAAATGATGTAGCGGAGCAGTGGGAAGACCA  
 CGAAGCCCAAGCCATAGAAACAGCTAGAGCATAGGCTATATGCCATGAATAATATTTAAATTGAT  
 ACGATCATCAAGTGTGCATCACTTCTCCTGTTCTGCCAAGACTTCNTCCTCTTTGTTTGCATTTAATGGA  
 CACAGTCTTANAAACNTTNGAATAAAAAANCCANACNTTTNNNTCNTTNGTGATNAATGCCNTTANCAA  
 NNNTTNTNTTGNCGNTNCCCTGNNTAAACCTGNCCNAGNCTNAANTTNNNNNGGTTTNNNAANNTTAAA  
 ANNTGNCNCCCNNTTTTNTTNCNCCNNTNAANNAANCNTNNANAANGNTTTTNGTNNCCNN  
 GGGNGGGNTTTTTTTTTTTTTTTTTNTN

Unigene Name: UNC84B Unigene ID: Hs.406612

Human UNC84B mRNA sequence - var1 (public gi: 31742497) (SEQ ID NO: 211)

CCGCCCCCGCCCTGTGTCGCGCTCGCGCTCTTCGCGTGCCCGCGCGCCCCGGGCGCCGCTGTGTC  
 GCCCTGAGCGGAGCGCCGCGCGGGATCCCCACGCGGAAAGGGGGCGCGCCCCGGCGCGGCTGGCCT  
 CGGACGCCCGCGCGGGCTAGAAGCCGCGCGGCGAGCAGATTCTCTTCAGGGGAAGAGTCCACATCCCA  
 CCTCATCATGTCCCGAAGAAGCCAGCGCCTCAGCGCTACTCCAGGGTGACGATGACGGCAGCAGCAGC  
 AGCGGAGGGAGCTCGGTGGCTGGGAGTCAGAGCACCTGTTTAAAGACAGTCTCTCAGGACCTTGAAGA  
 GGAAATCCAGCAACATGAAGCGCCTGTCCCCAGCGCCACAGCTGGGCCCCGTCTCTGATGCACACACCTC  
 CTACTACAGTGAGTCTGCTGGTCCACGAGTCTGGTTCCCAACCCAGGAGCTCCCTGGAGGAAGTGCATGGT  
 GACGCCAACTGGGGTGAGGACCTGCGGGTGCGGAGGAGAGGCACGGGTGGCTCAGAGAGCAGCAGGG  
 CCAGCGGGCTGTGGGGCGCAAGGCCACCGAGGACTTCTGGGCTCTTCTCGGGCTACTCTCTGAGGA  
 CGACTACGTGGGCTACTCGGATGTGGACCAGCAGAGTTCAGCTCGCGGCTCCGAAGCGCCGTCTCACGG  
 GCGGGCTCCTTACTCTGGATGTGGCCACTTCGCCAGGCGGCTCTTCAGACTTCTCTACTGGTGGGCTG  
 GCACCACCTGGTACCGCTGACCACAGCTGCCTCCCTCCTTGACGCTCTCGTTTAAACAGGCGCTTCTC  
 GTCCCTGAAGACGTTCTCTGGTTCCTGCTGCCGCTGCTCTTGCTGACGTGCCTGACGTATGGTGTCTGG  
 TATTTCTACCCCTATGGGCTGCAGACATTCCACCTCTTGGTTTCTGGTGGGCGAGCGAAGGACAGCA  
 GGAGGCCGGATGAGGGCTGGGAAGCCAGAGACTCATGCCACATTTCCAGGCTGAGCAGCGTGTATGTC  
 CCGGGTACACTCTCTGGAGCGGCGTCTGGAAGCTCTTGCTGCTGAATTTTCTCCAACCTGGCAGAAGGAG  
 GCCATGCGGCTGGAACGTCTGGAGCTGCGGCAAGGGGCTCCTGGCCAGGGAGGTGGTGGTGGCCTGAGCC  
 ACGAGGACACCCTGGCGCTGCTGGAGGGGCTAGTGAGCCGCGCTGAAGCTGCCCTGAAGGAGGATTTCCG  
 CAGGAAACTGCTGCTGCTCGCATCCAGGAAGACTGTCTGCCCTGAGAGCAGAGCATCAGCAAGACTCAGAA  
 GACCTCTTCAAGAAGATCGTCCGGGCTCCAGGAGTCCGAGGCTCGCATCCAGCAGCTGAAGTCAGAGT

Figure 36 part - 135



GGCAAGCATGACCCAGGAGTCTCTCCAGGAGAGCTCTGTGAAGGAGCTGAGGCGGCTGGAGGACCAGCT  
GGCCGGCTGCAGCAGGAGCTGGCGGCTCTGGCACTGAAGCAGAGCTCGGTGGCGGAAGAAGTGGGCCTG  
CTGCCCCAGCAGATCCAGGCCGTGCGGGACGACGTGGAATCTCAGTTCCCGGCTGGATCAGTCAGTTCC  
TTGCCCCAGGTGGAGGGGGCGCGTGGGGCTCTTCCAGAGAGAGGAGATGCAAGCTCAGCTGCGAGAGCT  
GGAGAGCAAGATCCTCACCCATGTGGCAGAGATGCAGGGCAAGTCGGCCAGGGAAGCCGCGGCTCCCTG  
AGCCTGACGCTGCAGAAAGAAGGTGTGATTGGAGTGACAGAGGAGCAGGTGCACCACATCGTGAAGCAGG  
CCCTGCAGCGCTACAGTGAGGACCGCATCGGGCTGGCAGACTACGCCCTGGAGTCAGGAGGGGCCAGCGT  
CATCAGCACCCGATGTTCTGAGACCTACGAGACCAAGACGGCCCTCCTCAGCCTCTTCGGCATCCCCCTG  
TGGTACCACTCCAGTCACCCCGAGTCATCCTCCAGCCAGATGTGCACCCAGGCAACTGCTGGGCCTTCC  
AGGGGCCACAAGGCTTCGCGGTGGTCCGCTCTCTGCCCGCATCCGCCCCACAGCCGTACCTTAGAGCA  
TGTGCCCAAGGCTTGTACCCAAACAGCACTATCTCCAGTGCCCCCAAGGACTTCGCCATCTTTGGGTTT  
GACGAAGACCTGCAGCAGGAGGGGACACTCCTTGGCAAGTTCACTTACGATCAGGACGGCGAGCCTATT  
AGACGTTTCACTTTCAGGCCCCCTACGATGGCCACGTACAGGTGGTGGAGCTGCGGATCCTGACTAACTG  
GGGCCACCCCGAGTACACCTGCATCTACCGCTTCAGAGTGCATGGGGAGCCCGCCACTAGCCCTGCTTA  
CTGGTGCCTGCTGCCAGCCATCTGGGAGTGGGTGAACAGCACCCCGCGCTTCCCCACACGCTTGCTCG  
GCGCTCTGACTTCTAGGAGCACAAGAGAGGAGCCTGTGGCCCCATGCAGATGAAAAGGACGGGCAGGGT  
TCCTGAGCAGCAGGTGGCTCGAGGCGGTTAGCAGGCTCCAGCAGCTCCCTTCTTCTTCCCTCTGTGCC  
GTGGCGTCTGCTTCCCATCCTGGGAGTGTGTATATATGTAGCATATCATGGGGACTGGGAAGTTGGGAG  
AGGTAGGACCTGACTGGTCTTGGCTGGGGTTCAGGGGCTGGTGCCTGGGAGCTGATGAAGCAGGTGCCAGG  
GCTGTGGGAGGGGCAAGCTACGGCCTGGGCTAGGTGAGCTGCCTCTGCCCTGGGCAAGGAAGCGAGGCC  
CTCTGGGAGGAGGTGCTTAGCTCCAGAGCAGGATGGGACTTCCCCAGGCAGGAAGCACTTGATGGAGAG  
CTGCCCAGCTCTCTACAAGGTTAGTGCCCTCCACCTAGGGAAGCATGAACCACAGGGTCCCTGAGGGCC  
TTGACAAAGAGTGTGTTTGTCCCGGGAGGGTAGCAGTGGGCCATGGGGCTTCTGTGCCCTAAAGGG  
GACTGGCTGCTGTGATCTTCTAAGGGGGCCAGGGCCAACCTGTAGGCTTCCCTCTGCTGGGGACGGTA  
GTTGCTTTTCTCTCTCTGATGCTAGGTTGGGGCCACCCTGCTCCCTGTTCTGCTAGGGCCTGCCAGT  
GCCCTGAGCTTGCTTCCACATTCTCCAGGCTATGGAGACCTAGACCTGTCTTTGGGGCCATTAGCAT  
CTGGGGTTATAGCAAGAAGAGTGGGGAGCATGGAACCTCTGGGCTCTGTGGGGACGTTGAGGGCTCGG  
GTGCGAGGTCTGTCTGACCGGCCCCACATCTAACCAGGCCCTGATGTAGGGGTCTCGCTCAGGCT  
GCCCTTGGGCTCTTGCAGCTCTTGTTCAGGTAGTCGCCCTTCTGTTTGTCTCTGTGGGGCAGTTGG  
TGGGGGCTGGGGGAAGAGGCTGGCAGAAGTTACCCTGGATAGGGAAGGGGGAGGAGGGGACTTTTAGAGC  
CAGCAGGCCCCACTGTATTATGTATATATTTTTCAAGGTCTGTTTTTCTAAGTGAAGGCTAAGGGCTTG  
ATTCCTAGCCCGCTCTGTGGGGCACTGGGTGATACTCAGTTTCTGTCTCTGGCCGTGGAGAGGGCCT  
GGGGCACTGGTTCGGCTGTGTCTGGTGGTCTGGCTCGGGGAAGGGGCAAGAAGGCGGGCAGGCCTTCA  
CTGCAGCACTGAGCCTCAAATCCGCTCTGGAGCATGAGGCTGGATGCAGTGGTGGTGGAGCCGCCCGCT  
CCATCCCGAGGCAGCCAGGCTTGTGTTTGCCTCTCTGTGTACAAATGCTGCAGTATTGTTCTTAAGTT  
TTTTATCTCCAGATCCTAATTTATGCCTATGCAAAAATAAATGACGCCCAAGAGCTG

#### Human UNC84B protein sequence - var1 (public gi: 31742498) (SEQ ID NO: 314)

MSRRSQRLLTRYSGQDDGSSSSGGSSVAGSQSTLFDSPRLTLKRKSSNMKRLSPAPQLGPSSDAHTSY  
SESLVHESWFPPrSSLEELHGDANWGEDLRVRRRTGTGSESSRASGLVGRKATEDFLGSSSGYSSDDY  
VGYSVDVQSSSSRLRSVSRAGSLLMVATSPGRLFRLLYWWAGTTWYRLTTAASLLDVFLTRFSSSL  
KTFLLWFLPLLLLLTCLTYGAWFYFYPYGLQTFHPALVSWWAAKDSRRPDEGWEDSSPHFQAEQVRMSRV  
HSLERRLEALAAEFSSNWQKEAMRLERLELRQAPGQGGGGLSHEDTLALLEGLVSRREAALKEDFRRE  
TAARIQEELSALRAEHQDSEDLFKKIVRASQSEARIQQLKSEWQSMQESFQESSVKELRRLLEDQLAG  
LQQLAALALKQSSVAEEVGLLPQOIQAVRDDVESQFPWISQFLARGGGGRVGLLQREEMQAQLRELES  
KILTHVAEMQKSAAREAAASLTLQKEGVIGVTEEQVHHIVKQALQRYSEDRIGLADYALESGGASVIS  
TRCSEYETKTALLSLFGIPLWYHSQSPRVILQPDVHPGNCWAFQGPQGFVAVRLSARIRPTAVTLEHVP  
KALSPNSTISSAPKDFAI FGFDEDLQOEGTLLGKFTYDQDGEPIQTFHFQAPTMTATYQVVELRILTNWGH  
PEYTCIYRFRVHGEPAH

#### Human UNC84B pray sequence - var1 (SEQ ID NO: 212)

GATTTGGAATNCTACAGGNATGTTTAATACCACTACAATGGATGATGTATATACTATCTATTTCGATG  
ATGAAGATACCCACCAACCCAAAAAAGAGATCTTTAATACGACTCGACTATAGGGCGAGCGCCGCCA  
TGGAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCACCCCAAGCAG  
TGGTATCAACGCATAGTGGAAAAGCATGACCCAGAGTCTTCCAGGAGAGCTCTGTGAAGGAGCTGAGG  
CGGCTGGAGGACCAGCTGGCCGGCTGCAGCAGGAGCTGGCGGCTCTGGCACTGAAGCAGAGCTCGGTGG  
CGGAAGAAGTGGGCCTGCTGCCCCAGCAGATCCAGGCCGTGCGGGACGACGTGGAATCTCAGTTCCCGGC  
CTGGATCAGTCAGTTCTTGGCCGAGGTGGAGGGGGCCGCTGGGGCTCCTTCCAGAGAGAGGAGATGCAA  
GCTCAGCTGCGAGAGCTGGAGAGCAAGATCCTCACCCATGTGGCAGAGATGCAGGGCAAGTCGGCCAGGG  
AAGCCGCGGCTCCTGAGCCTGACGCTNCANAAAGAGGTGTGATTGGAGTGACAGAGGAGCAGGTGCA  
CCACATCGTGAAGCAGGCCCTGCAGCGCTACAGTGAGGACCGCATCGGGCTGGCAGACTACGCCCTGGAG  
TCAGGAGGGGCCAGCGTCATCAGCACCCGATGTTCTGAGACCTACNAGACCAAGACGGNCCTNCTCAGCC

TCTTNGGNATCCCCCTGGGGTACCACTCCCAGTCACCCCNAGTCATNCTCCANATGNGCAGCCAGGCNAC  
TGNTGGGCCTTNCAGGGGCCANNGGGNTTNNCCGGGNGCCGNTTTTTCCNA

Human UNC84B pray sequence - var2 (SEQ ID NO: 213)

CGCCGCCATGGTAGTACCCATACGACGTACCACTATTACGCTCATATGGCTCATGGCAGGCCAGTGAATT  
CCACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCTCGGGGACGGCTGAGCCTATTACAGACGT  
TTCACCTTTCAGGCCCCCTACGATGGCCACGTACCACTGGTGGAGCTGCGGATTCTGACTAACTGGGGCCA  
CCCCGAGTACACCTGCATCTACCGCTTCAGAGTGCATGGGGAGCCCGCCCACTAGCCCTGCTTACTGGTG  
CCCGCTGCCAGCCATCTGGGAGTGGGTGAACAGCACCCCGCCGCTTCCCCCACACGCTTGCTCGGCGCTC  
TGACTTCTAGGAGCACAAAGAGAGGAGCCTGTGGCCCCATGCAGATGAAAAGGACGGGCAGGGTCTCCTGA  
GCANCAGGTGGCTCGAGGCGGTAGCAGCTCCANACAGCTCCCTTCTTCCCTCTGTGCCCCGTGGCG  
TCTGCTTCCCATCTGGGAGTGTGTNTATATNTANCATATCATGGGGGACTGG

Unigene Name: VCY2IP1 Unigene ID: Hs.66048 Clone ID: GD\_181

Human VCY2IP1 mRNA sequence - var1 (public gi: 22002952) (SEQ ID NO: 214)

AAGATGGCGGGCGGTGGCTGGATCTGGGGCTGCCGCGGCTCCGAGCTCACTGCTCCTCGTGGTGGGCAGCG  
AGTTCGGGAGCCCGGGCTCCTCACCTACGTCTGGAGGAGCTCGAAAGAGGCATCCGGTCTTGGGATGT  
CGATCCTGGCGTCTGCAACCTTGATGAACAGCTCAAGGTCTTTGTGTCCCGACACTCTGCCACCTTGTCC  
AGCATTGTGAAAGGCCAGCGGAGCCTGCACCACCGTGGAGACAACCTGGAGACCCTGGTCTCCTGAACC  
CATCAGACAAGTCCCTGTATGATGAGCTCCGGAACCTTCTGTTGGACCCTGCCTCTCACAAGCTACTGGT  
GTTGCTGGGCTCTGCCTGGAGGAGACGGGGAGCTGCTGCTACAGACAGGGGGCTTCTCGCCTCACCAC  
TTCTCCAGGTCTGAAGGACAGAGAGATCCGGGACATCTGGCCACCACGCCCCACCTGTGCAGCCGC  
CCATACCTACCATCACCTGCCCACTTCCGGTGACTGGGCTCAGCCGGCACCCGCTGTGCTGCCCTTCA  
GGGGGCGCTCCGGCTCCAGCTGCGGCTGAACCCCCCGGCGCAGCTGCCCAACTCTGAGGGCTGTGCGAA  
TTCTGGAGTACGTGGCTGAGTCTCTGGAGCCACCGTCCCCCTTCGAGCTGCTGGAGCCCCGACCTCCG  
GGGGCTTCTCAGGCTGGGCGGCGCCTGCTGCTACATCTTCCCTGGAGGCTCGGGGATGCCGCTTCTT  
CGCCGTCATGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTCCAGTTTCTGGAAGCTGGTG  
CGGCACCTGGACCCGCTGGATGCCGTGCTGGTGACCCACCTGGCGCCGACAGCCTCCCGGCTCAACA  
GCCTGCTGCGGCGCAAACCTGGCGGAGCGCTCCGAGGTGGCTGCTGGTGGGGCTCCTGGGACGACAGGCT  
GCGCAGGCTCATCTCCCCAACCTGGGGGTGCTGTTCTTCAACGCCTGCGAGGCCGCTGCGGCTGGCG  
CGCGCGGAGGATGAGGCGGAGCTGGCGCTGAGCCTCCTGGCGCAGCTGGGCATCACGCCTCTGCCACTCA  
GCCGCGGCCCCGTGCCAGCCAAACCCACCGTCTTTCGAGAAGATGGGCGTGGGCGGCTGGACATGTA  
TGTGCTGCACCCGCTTCCGCGGCGCCGAGCGCACCTCCCTGAGTCCACCCGAGCCCCGACAGGCGAGCGAG  
CCCGCGGCCCCGGCGAGAAGGTGGTGCAGCTGCTGTTCCCGGTTGCACCCCGCCCGCTGCCTCCTGG  
ACGGCTGGTCCGCTGCAGCACTTGAGGTTCCTGCGAGAGCCCGTGGTGACGCCCCAGGACCTGGAGGG  
GCCGGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGGACAGCTCGAAGAGAGAGGGCTCCTGGCC  
ACCCACCTAGACCTGGCCAGGAGCGCCCTGGGGTGGCCCGCAAGGAGCCAGCACGGGCTGAGGCCCCAC  
GCAAGACTGAGAAAGAACCAAGACCCCGGAGTTGAGGAAAGACCCCAACCGAGTGTCTCCCGGAC  
CCAGCCGCGGAGGTGCGCCGGGCGAGCCTCTTCTGTGCCAACCTCAAGAAGACGAATGCCAGGCGGCA  
CCCAAGCCCCGCAAAGCGCCAGCACGTCCCACTCTGGCTTCCCGCCGGTGGCAAATGGACCCCGCAGCC  
CGCCAGCCTCCGATGTGGAGAAGCCAGCCCCCAGTGCAGCCTGCGGCTCTCCGGCTCCAGCTGGT  
GGCCACGCCCAGCCTGGAGCTGGGGCCGATCCAGCCGGGAGGAGAAGGCACTGGAGCTGCCTTTGGCC  
GCCAGCTCAATCCCAAGGCCACGCACACCCTCCCTGAGTCCACCCGAGCCCCGACAGGCGAGCGAG  
GGTGTGCTGAGCCCACTGCGGGGCGGGGAGGCCGGGCGAGACGCTCACCACAGTGACCACACCCAC  
GGTGACCACGCCCTCACTACCCGAGAGGTGGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTGTG  
GTGCTCTTGGAGAGGTGCTGCCGCCATCCGCCCCACCAAGTGAAGCTGGGCTGAGCCTCCCGCTGCGTG  
GCCCCGGGCGCGGCTCGGCTTCCCCACAGATGTGGACCTGTGCTGGTGTACCCCTGTGAATTGA  
GCATCGCAAGCGGTGCCAATGGCACCGGCACCTGCGTCCCCCGGAGCTCGAATGACAGCAGTGCCCCG  
TCACAGGAACGGGCAGGTGGGCTGGGGGCCGAGGAGACGCCACCCACATCGGTGAGCGAGTCCCTGCCCA  
CCCTGTCTGACTCGGATCCCGTGCCCTGGCCCCCGGTGCGGCAGACTCAGACGAAGACAGAGGGCTT  
TGGAGTCCCTCGCCAGACCTTTGCTGACCCCTCAAGGTCCCCCACCCTGCCTGACCCATCCAGC  
ATCTGCATGGTGGACCCCGAGATGCTGCCCCCAAGACAGCACGGCAAACGGAGAACGTGAGCCGACCC  
GGAAGCCCCCTGGCCCCCCCCAACTCACGCGCTGCCGCCCCCAAAGCCACTCCAGTGGCTGCTGCCAAAC  
CAAGGGGCTTGGTGGTGGGACCGTGACCCGACCACTCAGTGCCCGGAGTGAGCCAGTGAAGAGGA  
GGCCGGGACCCCTGTCCAGAAAGTCTCAACCCCCAAGACTGCCACTCGAGGCCCCGTGGGGTTCAGCCA  
GCAGCCGGGCGGGGTGTCAGCCACCCACCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCCAG  
CGGGAGCAGCGCCCACTGGTGGATGAGGAGTCTTCCAGCGCGTGCGCGCGCTCTGCTACGTATCAGT  
GGCCAGGACAGCGCAAGGAGGAAGGCATGCGGGCGCTCTGGACGCGCTACTGGCCAGCAAGCAGCATT  
GGGACCGTGACCTGAGGTGACCTGATCCCACTTTCGACTCGGTGGCCATGCATACGTGGTACGCAGA  
GACGCACGCCCCGGCACAGGCGCTGGGCATCACGGTGTGGGCAGCAACAGCATGGTGTCCATGCAGGAT  
GACGCTTCCCGCTGCAAGGTGGAGTCTAGCCCCATCGCCGACACGCCCCCACTCAGCCAGCCCC

Figure 36 part - 137

CCTGTCCCTAGATTCAGCCACATCAGAAATAAACTGTGACTAC

Human VCY2IP1 mRNA sequence - var2 (public gi: 21739762) (SEQ ID NO: 215)

CCGAAGATGGCGGCGGTGGCTGGATCTGGGGCTGCCGCGGCTCCGAGCTCACTGCTCCTCGTGGTGGGCA  
GCCAGTTTCGGGAGCCCGGGGCTCCTCACCTACGTCTCTGGAGGAGCTCGAAAGAGGCATCCGGTCTTGGGA  
TGTCGACCTTGGCGCTCTGCAACCTTGATGAACAGCTCAAGGTCTTTGTGTCCGACACTCTGCCACCTTC  
TCCAGCATTTGTGAAGGCGCAGCGGAGCCTGCACCACCTGGAGACAACCTGTGAGACCTTGGTCTCTCTGA  
ACCCATCAGACAAGTCCCTGTATGATGAGCTCCGGAACCTTCTGTTGGACCTGCCTCTCACAAGCTACT  
GGTGTGGCTGGGCCCTGCCCTGGAGGAGACGGGGGAGCTGCTGCTACAGACAGGGGGCTTCTCGCCTCAC  
CACTTCCTCCAGGTCCTGAAGGACAGAGAGATCCGGGACATCCTGGCCACCACGCCCCACCTGTGCAGC  
CGCCCATACTCACCATCACCTGCCCCACCTTCGGTGACTGGGCTCAGTGGCAACCCGCTGTGCTGGCCCT  
TCAGGGGGCGCTCCGGCTCCAGTCTGCGGTGAACCCCGGCGCAGCTGCCCAACTGTAGGGCCTGTGC  
GAAATTCCTGGAGTACGTGGCTGAGTCTCTGAGGCCACCGTCCCCCTTCGAGCTGCTGGAGCCCCGACCT  
CCGGGGGCTTCTCAGGCTGGGCCGGCCCTGCTGCTACATCTTCCCTGGAGGCTCGGGGATGCCGCTT  
CTTCGCCGTCATAGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTCCAGTTTCTGGAAGCTG  
GTGCGGCACCTGGACCGCGTGGATGCGCGTGTGGTGACCCACCTGGCGCGACAGCCTCCCTCGCTCA  
ACGCGCTGCTGCGCGCAAACTGGCGGAGCGTCCGAGGTGGCTGCTGGTGGGGCTCTGGGACGACAG  
GCTGCGCAGGCTCATCTCCCCAACCTGGGGGTCTGTCTTCTCAAACGCTGCGAGGCCGCTCGCGGCTG  
GCGCGCGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCTTGGCGAGCTGGGCATCACGCTCTGCCAC  
TCAGCCGCGGCCCCGTGCCAGCCAAACCCACCGTGCTCTTCGAGAAGATGGCGTGGGCCGCGCTGGACAT  
GTATGTGCTGCACCCGCCCTCCGCCGGCGCGAGCGCACGCTGGCCTCTGTGTGCGCCTGCTGGTGTGG  
CACCCCGCCGCCCCGCGAGGAAGTGGTGCGCGTGTCTCCCGGTTGACCCCGCCGCTACCTCC  
TGGACGGCTGGTCCGCCGTCAGCACTTGAGGTTCTTGGCAGAGCCGTTGGTGACGCCCCAGGACCTGGA  
GGGGCCGGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGACAGCTCGAAGAGAGAGGGGCTCTCTG  
GCCACCCACCTTAGACCTGGCCAGGAGCGCCTGGGGGTGGCCCGCAAGGAGCCAGCACGGGCTGAGGCC  
CAGCCAAGACTGGAAGAAAGACCAAGACCCCCGGGAGTTGAAGAAAGACCCCAACCGAGTGTCTCCCG  
GACCCAGCCGCGGAGGTTGCGCCGGGACGCTCTTCTGTGCCAACCTCAAGAAACGAATGCCAGGCG  
GCACCCAAGCCCCGCAAAGCGCCAGCACGTCCTCACTCTGGCTTCCCGCCGGTGGCAAATGGACCCGCA  
GCCGCGCCAGCCTCCGATGTGGAGAAGCCAGCCCCCAGTGCAGCCTGCGGCTCTCCGGCTCCAGCT  
GGTGGCCACGCCCAGCCTGGAGCTGGGGCCGATCCGACCGGGGAGGAGAAGGCACCTGGAGCTGCCTTTG  
CCCGCCAGCTCAATCCCAAGGCCACACCTCTCCCTGAGTCCCACCGGAGCCCCGACAGGCGACGCG  
AGCGGCTGTGCTGAGCCACTGCGGGGCGGGGAGGCCGCGGACAGCCTCACCACAGTGACCAACC  
CACGGTGACCACGCCCCTCACTACCCGACAGAGGTGGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTG  
TCGGTGTCTTTGAGCAGGTGCTGCGGCCATCCGCCCCACCAAGTGAGGCTGGGCTGAGCCTCCCGCTGC  
GTGGCCCCCGGGCGGGCGCTCGGCTTCCCCACAGATGTGGACACTGTGCTTGGTGTACCTGTGAATT  
TGAGCATCGAAGCGGTCGAATGGCAACCGGCACCTCTCCCTGAGTCCCACCGGAGCCCCGACAGGCGACG  
AGCGGCTGTGCTGAGCCACTGCGGGGCGGGGAGGCCGCGGACAGCCTCACCACAGTGACCAACC  
CACGGTGACCACGCCCCTCACTACCCGACAGAGGTGGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTG  
TCGGTGTCTTTGAGCAGGTGCTGCGGCCATCCGCCCCACCAAGTGAGGCTGGGCTGAGCCTCCCGCTGC  
GTGGCCCCCGGGCGGGCGCTCGGCTTCCCCACAGATGTGGACACTGTGCTTGGTGTACCTGTGAATT  
TGAGCATCGAAGCGGTCGAATGGCAACCGGCACCTCTCCCTGAGTCCCACCGGAGCCCCGACAGGCGACG  
CGGTCACAGGAACGGGAGGTGCGGCTGGGGGCGGGGAGGCCAGCCACCCACATCGGTGACGAGTCCCTGC  
CCACCTGTCTGACTCGGATCCCGTGCCCTGGCCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGG  
CTTTGGAGTCCCTCGCCACGACCCTTTGCTGACCCCCCTCAAGTTCCCCCACCACTGCCTGACCCATCC  
AGCATCTGCATGGTGACCCCGAGATGTCGCCCCCAAGACAGCAGCAACCGGAGAACGTGACCGCGCA  
CCCGGAAGCCCTTGGCCCCCCCCAATCACGCGCTGCGCCCCCAAGGCATCTCAGTGGCTGCTGCCAA  
AACCAAGGGGCTTGTGTGGTGGGACCGTGCCAGCCGACCACTCAGTGCCCGGAGTGAGCCAGCTGAGAAG  
GGAGGCCGGGCACCCCTGTCCAGAAAGTCTCAACCCCCAAGACTGCCACTCGAGGCCGCTCGGGGTGAG  
CCAGCAGCGCGGCCGGGGTGTGAGCCACCCACCAAGTCCCCGGTCTACTGGACCTGGCCTACCTGCC  
CAGCGGGAGCAGCGCCCACTGGTGGATGAGGAGTTCTTCAGCGCGTGCGCGCGCTCTGCTACGTGCTATC  
AGTGCCACGAGACAGCGCAAGGAGGAAGTATCGGGCGCTCTGGACGCGCTACTGGCCAGCAAGCAGC  
ATTGGGACCGTGACCTGCAGGTGACCTGATCCCCACTTTCGACTCGGTGGCGATGCATACGTGGTACGC  
AGAGACGCACGCCCCGACACAGGCGCTGGGCATCACGCTGTTGGGCAGCAACAGCATGGTGTCCATGCAG  
GATGACGCTTCCCGGCTGCAAGGTGAGTTCTAGCCCCATCGCCGACACGCCCCCACTCAGCCACG  
CCGCTGTCCCTAGATTACGCCACATCAGAAATAAACTGTGACTACACTTGGTAAAAAAAAAAAAAAAAAA

Human VCY2IP1 mRNA sequence - var3 (public gi: 21104445) (SEQ ID NO: 216)

CCGAGGTGGCTGCTGGTGGGGGCTCCTGGGACGACAGGCTGCGCAGGCTCATCTCCCCAACCTGGGGGT  
CGTGTCTCTTCAACGCCTGCGAGGCCGCGTCGCGGCTGGCGCGCGGCGAGGATGAGCGGGAGCTGGCGCTG  
AGCCTCCTGGCGCAGCTGGGCATCACGCCTCTGCCACTCAGCCGCGGGCCCCGTGCCAGCCAAACCCACCG  
TGCTCTTTCGAGAAGATGGGCCTGGGCCGGCTGGACATGTATGTGCTGCACCCGCCCTCCGCCGGCGCCGA  
GCGCACGCTGGCCTCTGTGTGCGCCCTGCTGGTGTGGCACCCGCGGGCCCCGGCGAGAAGGTGGTGC GC  
GTGCTGTTCCCGGTTGCACCCCGCCCGCCTGCCTCCTGGACGGCTGGTCCGCCTGCAGCACTTGAGGT  
TCCCTCGAGAGCCCCGTGGTGAGCCCGACGACCTGGAGGGGCCGGGGCGAGCCGAGAGCAAAGAGAGCGT  
GGCTCCCGGAGCAGCTCGAAGAGAGAGAGGGCTCTGGCCACCCACCTAGACCTGGCCAGGAGCGCCCT  
GGGGTGGCCCGCAAGGAGCCAGCACGGGCTGAGGCCCCACGCAAGACTGAGAAAGAAGCCAAAGGCCCCCC

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GGGAGTTGAAGAAAGACCCCAAACCGAGTGTCTCCCGACCCAGCCGCGGGAGGTGCGCCGGGCGAGCCTC  
 TTCTGTGCCAACCTCAAGAAGACGAATGCCAGGCGGCACCCAAAGCCCCGAAAGCGCCAGCAGTCC  
 CACTCTGGCTTCCGCGGGTGGCAAATGGACCCCGCAGCCCGCCAGCCTCCGATGTGGAGAAGCCAGCC  
 CCCCCAGTGACGCTGCGGCTCTCCGGCTCCAGCTGGTGGCCACGCCAGCCTGGAGCTGGGGCCGAT  
 CCCAGCCGGGAGGAGAAGGCACTGGAGCTGCCCTTTGGCCGCCAGCTCAATCCCAAGGCCACGCACACCC  
 TCCCCTGAGTCCACCGGAGCCCCGAGAGGGCAGCGAGCGGCTGTGCTGAGCCCACTGCGGGCGGGG  
 AGGCCGGGCCAGACGCTCACCCACAGTGACCACACCCACGGTGACCACGCCCTCACTACCCGAGAGGT  
 GGGCTCCCGCACTCGACCGAGGTGGACGAGTCCCTGTGCTGCTCTTTGAGCAGGTGCTGCCGCCATCC  
 GCCCCACAGTGAGGCTGGGCTGAGCCTCCCGTGTGCTGGCCCCCGGGCGCGGCTCGGCTTCCCCAC  
 ACGATGTGGACCTGTGCTGCTGTCACCTGTGAATTTGAGCATCGCAAGCGGTGCCAATGGCACCAGGC  
 ACCTGCGTCCCCCGGAGCTCGAATGACAGCAGTCCCCGGTACAGGAACGGGCGAGGTGGGCTGGGGGCC  
 GAGGAGACGCCACCCACATCGGTGAGCGAGTCCCTGCCACCCCTGTCTGACTCGGATCCCGTGGCCCTGG  
 CCCCCGAGTGCCTCAGACGAAGACACAGAGGGCTTTGGAGTCCCTCGCCACGACCCCTTTGCTGTA  
 CCCCCCAAGGTCCCCCACCCTGCTGACCCATCCAGCATCTGCATGGTGGACCCCGAGATGCTGCC  
 CCAAGACAGCAGCGCAAACGGAGAAGCTCAGCCGACCCGGAAGCCCTGGCCCGCCCCAACTCACGCG  
 CTGCCGCCCCCAAAGCCACTCCAGTGGCTGCTGCCAAAACCAAGGGGCTTGCTGGTGGGGACCGTGCCAG  
 CCGACCACTAGTGCCCGAGTGAGCCAGTGAGAAGGGAGGCCGGGCGACCCCTGTCCAGAAAGTCTCTCA  
 ACCCCCAAGACTGCCACTCGAGGCCGCTCGGGTCACTGAGCGAGCCGCGGGGTGTCAGCCACCCAC  
 CCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCCAGCGGGAGCAGCGCCACCTGGTGGATGAGGA  
 GTTCTTCCAGCGCTGCGCGCGCTCTGCTACGTATCAGTGGCCAGGACCAGCGCAAGGAGGAAGGCATG  
 CGGGCCGCTCTGGACGCGCTACTGGCCAGCAAGCAGCATTTGGGACCGTGACCTGCAGGTGACCTGATCC  
 CCACCTTTCGACTCGGTGGCCATGCATACGTGGTACGACAGACGCACGCCCGGCACCAGGCGCTGGGCAT  
 CACGTGTTGGGCAGCAACAGCATGGTGTCCATGAGATGACGCCTTCCCGGCTGCAAGGTGGAGTTC  
 TAGCCCCATCGCCGACACGCCCCCACTCAGCCAGCCCGCTGTCCCTAGATTACGCCACATCAGAAAT  
 AAATGTGACTTCCAAAAA

Human VCY2IP1 mRNA sequence - var4 (public gi: 14250679) (SEQ ID NO: 217)

GGCAGGAGCGCCTTCTTCGCGCTCAATGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTC  
 CAGTTTCTGGAAGCTGGTGGCCACCTGGACCGCGTGGATGCCGTGCTGGTGACCCACCTGGCGCCGAC  
 AGCCTCCCGGCTCAACAGCCTGCTGCGCGCAACTGGCGGAGCGCTCCGAGGTGGCTGCTGGG  
 GCTCCTGGGACGACAGGCTGCGCAGGCTCATCTCCCCAACCTGGGGGTGCTGTTCTTCAACGCTGCGA  
 GGCCGCGTTCGCGGCTGGCGCGCGGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCCTGGCGCAGCTGGGC  
 ATCAGCCTCTGCCACTCAGCCGCGGCCCCGTGCCAGCCAAACCCACCGTGCTCTTCGAGAAGATGGGCG  
 TGGCCGGCTGGACATGTATGTGCTGCACCCGCCCCCGCGGCGAGAGCGTGGCCTCTGTGTG  
 CGCCTGCTGGTGTGTCACCCGCCCCCGGCGAGAAGGTGGTGGCGTGTGTTCCCGGCTGCACCC  
 CCGCCGCTGCTCCTGACCGGCTGGTCCGCTGCAGCACTTGAGTTCTGCGAGAGCCCGTGGTGA  
 CGCCCCAGGACCTGGAGGGGCGGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGGACAGCTCGAA  
 GAGAGAGGGCCTCCTGGCCACCCACCTAGACCTGGCCAGGAGCGCCCTGGGGTGGCCCGCAAGGAGCCA  
 GCACGGCTGAGGCCCCACGCAAGACTGAGAAAGAAGCCAAGACCCCCCGGGAGTTGAAGAAAGACCCCA  
 AACCGAGTGTCTCCCGGACCCAGCCGCGGAGGTGCGCCGGCAGCCTCTTCTGTGCCAACCTCAAGAA  
 GACGAATGCCAGGCGGCACCCAAGCCCCGCAAAGCGCCAGCAGCTCCACTCTGGCTTCCCGCCGCTG  
 GCAAATGGACCCCGAGCCCGCCAGCTCCGATGTGGAGAAGCCAGCCCCCAGTGACGCTGCGGCT  
 CTCCGGCTCCAGCTGGTGGCCACGCCAGCCTGGAGCTGGGGCCGATCCAGCCGGGGAGGAGAAGGC  
 ACTGGAGCTGCCCTTGGCCCGCAGCTCAATCCCAAGGCCACGCACACCCTCCCTGAGTCCCACCGGAGC  
 CCCGAGAGGGCAGCGAGCGGCTGTGCTGAGCCCACTGCGGGGCGGGGAGGCCGGGCCAGACGCTCAC  
 CCACAGTGACCACACCCACGGTGACCACGCCCTCACTACCCGAGAGGTGGGCTCCCGCACTCGACCGA  
 GGTGGACGAGTCCCTGTGCTGCTTGTGAGCAGGTGCTGCCGCCATCCGCCCCCAGTGAGGCTGGG  
 CTGAGCCTCCCGCTGCGTGGCCCCCGGGCGCGGCTCGGCTTCCCCACACGATGTGGACCTGTGCTGG  
 TGTCAACCTGTGAATTTGAGCATCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGTCCCCCGGCGAGCTC  
 GAATGACAGCAGTGCCCGGTACAGGAACGGGAGGTGGGCTGGGGGCGAGGAGACGCCACCCACATCG  
 GTCAGCAGTCCCTGCCCACCTGTCTGACTCGGATCCCGTGGCCCGGCTGGCCCCCGGTGCGGCGAGCTCAG  
 ACGAAGACACAGAGGGCTTTGGAGTCCCTCGCCACGACCCTTTGCTGACCCCTCAAGGTCCCCCACC  
 ACTGCTGACCCATCCAGCATCTGCATGGTGGACCCCGAGATGCTGCCCCCCAAGACAGCAGCGCAAACG  
 GAGAACGTGAGCCGACCCGGAAGCCCTGGCCCGCCCCAACTCACGCGCTGCCGCCCCCAAAGCCACTC  
 CAGTGGCTGTGCCAAAACCAAGGGGCTTGTGTTGGGACCGTGCCAGCCGACCACTGACCTCGA  
 TGAGCCAGTGAGAAGGGAGGCGGGGCAACCCCTGTCCAGAAAGTCTTCAACCCCCAAGACTGCCACTCGA  
 GGCCCGTCCGGGTGAGCCAGCAGCGGCCCCGGGTGTGAGCCACCCACCCAAAGTCCCCGGTCTACCTGG  
 ACCTGGCCTACCTGCCAGCGGAGCAGCGCCACCTGGTGGATGAGGAGTTCTTCCAGCGCTGCGCGC  
 GCTCTGCTACGTATCAGTGGCCAGGACCGCAAGGAGGAAGGCATGCGGGCCGTCTGGACGCGCTA  
 CTGGCCAGCAAGCAGCATTTGGACCGTGACCTGACGTGACCCCTGATCCCCACTTTCGACTCGGTGGCCA  
 TGCATACGTGGTACGACAGACGCACGCCCGGCACAGGCGCTGGGCATCACGGTGTGGGCAGCAACAG  
 CATGGTGTCCATGCAGGATGACGCCTTCCCGGCTTGAAGGTGGAGTTCTAGCCCCATCGCCGACACGCC  
 CCCCCTCAGCCAGCCCGCTGTCCCTAGATTACGCCACATCAGAAATAAAGTGTGACTACACTGAAA

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AAAAAAAAAAAAAAAAAAAAA

Human VCY2IP1 mRNA sequence - var5 (public gi: 13938254) (SEQ ID NO: 218)

GACACCGACAGGGACTCGTCCACCTCGGTGTCCTTTGAGCAGGTGCTGCCGCCATCCGCCCCACCAAGTG  
 AGGCTGGGCTGAGCCTCCCGCTGCGTGGCCCCGGGCGCGGCTCGGCTTCCCCACACGATGTGGACCT  
 GTGCTGGTGTACACCTGTGAATTTGAGCATCGCAAGGCGGTGCCAATGGCACCAGGACCTGCGTCCCC  
 GGCAGCTCGAATGACAGCAGTGGCCGCTCAGAGAACGGGCAGGTGGGCTGGGGGCCGAGGAGACGCCAC  
 CCACATCGGTGAGCGAGTCCCTGCCCCACCTGTCTGACTCGGATCCCGTGGCCCCCGGTGCGGC  
 AGACTCAGACGAAGACACAGAGGGCTTTGGAGTCCCTCGCCACGACCTTTGCCTGACCCCCCAAGGTC  
 CCCCCACCACTGCCTGACCCATCCAGCATCTGCATGGTGGACCCGAGATGCTGCCCCCAAGACAGCAC  
 GGCAACCGGAGAACGTGAGCCGACCCGGAAGCCCCCTGGCCCCCCCCAACTCACGCGTGGCCCCCCCCAA  
 AGCCACTCCAGTGGCTGCTGCCAAAACCAAGGGGCTTGCTGGTGGGGACCGTGCCAGCCGACCACTCAGT  
 GCGCGGAGTGAGCCAGTGAGAAGGGAGGCCGGGCACCCCTGTCCAGAAAGTCTCAACCCCCAAGACTG  
 CCATCTGAGGCCCTGCGGGTTCAGCCAGCAGCGGCCGGGGTGTGAGCCACCCACCAAGTCCCCGGT  
 CTACCTGGACCTGGCTACCTGCCAGCGGGAGCAGCGCCCACTGGTGGATGAGGAGTTCTTCCAGCGC  
 GTGCGCGCTCTGCTACGTATCAGTGGCCAGGACAGCGCAAGGAGGAAGGCATGCGGGCCGTCTTG  
 ACGCGCTACTGGCCAGCAAGCAGCATTTGGGACCGTGACCTGCAGGTGACCTGATCCCCACTTTGACTC  
 GGTGGCCATGCATACGTGGTACGCAGAGACGCACGCCCGGCACCCAGGCGCTGGGCATCACGGTGTGGGC  
 AGCAACAGCATGGTGTCCATGCAGGATGACGCTTCCCGCCTGCAAGGTGGAGTTCTAGCCCCATCGCC  
 GACACGCCCCCACTCAGCCAGCCCGCTGTCCCTAGATTGAGCCACATCAGAAATAAACTGTGACTAC  
 ACTTAAAAAAAAAAAAAAAAAAAAA

Human VCY2IP1 mRNA sequence - var6 (public gi: 14042428) (SEQ ID NO: 219)

AAGATGGCGGCGGTGGCTGGATCTGGGGCTGCCGCGGCTCCGAGCTCACTGCTCCTCGTGGTGGGCAGCG  
 AGTTCGGGAGCCCCGGGCTCCTCACCTACGTCTTGGAGGAGCTCGAAAGAGGCATCCGGTCTTGGGATGT  
 CGATCTGGCGCTGCAACCTTGATGAACAGCTCAAGTCTTTGTGTCCCGACACTCTGCCACCTTCTCC  
 AGCATTGTGAAGGCCAGCGGAGCCTGCACCACCGTGGAGACAACCTGGAGACCCTGGTCTCTGAAACC  
 CATCAGACAAGTCCCTGTATGATGAGCTCCGGAACCTTCTGTTGGACCCTGCCTCTCACAAGCTACTGGT  
 GTTGGCTGGGCTCTGCCTGGAGGAGACGGGGGAGCTGCTGTACAGACAGGGGGCTTCTCGCCTCACCAC  
 TTCCTCCAGGTCTGAAGGACAGAGAGATCCGGGACATCCTGGCCACCACGCCCCACCTGTGCAGCCGC  
 CCATCTACCATCACCTGCCACCTTCGGTGAATGGGCTCAGCCGGCACCCTGTGCTGGCCTTCA  
 GGGGGCGCTCCGGCTCCAGCTGCGCTGAACCCCCCGCGCAGCTGCCCAACTCTGAGGGCCTGTGCCAA  
 TTCCTGGAGTACGTGGCTGAGTCTCTGGAGCCACCGTCCCCCTTCGAGCTGCTGGAGCCCCGACCTCCG  
 GGGGCTTCTCAGGCTGGGCGCGCCTGCTGCTACATCTTCCCTGGAGGCTCGGGGATGCCGCTTCTT  
 CGCCGTCAATGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTCCAGTTTCTGGAAGCTGGT  
 CGGCACCTGGACCGCGTGGATGCCGTGCTGGTGACCCACCTGGCGCCGACAGCCTCCCCGGCCTCAACA  
 GCCTGCTGCGGCGCAAACTGGCGGAGCGCTCCGAGTGGCTGCTGGTGGGGGCTCCTGGGACGACAGGCT  
 GCGCAGGCTCATCTCCCCAACCTGGGGTCTGTCTTCAACGCTGCGAGGCGCGTCCGGCTGGCG  
 CGCGCGGAGGATGAGGCGGAGCTGGCGCTGAGCCTCTGGCGCAGCTGGGCATCACGCTCTGCCACTCA  
 GCCGCGCCCCGTGCCAGCAAACCCACCGTGTCTTTCGAGAAGATGGGCGTGGGCCGGCTGGACATGTA  
 TGTGCTGACCCCGCCTCCGCGCGCGGAGCCAGCAGCTGGCCTCTGTGTGCGCCCTGCTGGTGTGGC  
 CCGCGCGCCCCCGCGGAGAGGTGGTGGCGCTGCTTCTGTCGCCCCGTTGACCCCCCGCCGCTGCTTGG  
 ACGGCTGTCTCCGCTGCAGCACTTGAGGTTCTGCGAGAGCCGTTGGTGACGCCCCAGGACCTGGAGGG  
 GCCGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGACAGCTCGAAGAGAGAGGGCTCTTGGCC  
 ACCACCTTAGACCTGGCCAGGAGCGCCTGGGGTGGCCCCGCAAGGAGCCAGCACGGGCTGAGGCCCCAC  
 GCAAGACTGAGAAAGAAGCCAAGACCCCCCGGAGTTGAGGAAAGACCCCAAACCGAGTGTCTCCCGGAC  
 CCAGCCGCGGAGGTGCGCCGGGCGAGCCTCTTCTGTGCCCAACCTCAAGAAGACGAATGCCAGGCGGCA  
 CCAAGCCCCGCAAAGCGCCAGCAGTCCCACTCTGGCTTCCCGCCGGTGGCAAATGGACCCCCGAGCC  
 CGCCAGCCTCCGATGTGGAGAAGCCAGCCCCCAGTGCAGCCTGCGGCTCTCGGCCTCCAGCTGGT  
 GGCCACGCCCAGCCTGGAGCTGGGGCCGATCCAGCCGGGAGGAGAAGGCACTGGAGCTGCCTTTGGCC  
 GCCAGCTCAATCCCAAGGCCACGCACACCTTCCCTGAGTCCACCGAGCCCCGACAGAGGCGAGCAGC  
 GGCTGTGCTGAGCCACTGCGGGGCGGGGAGGCCGGGCGAGACGCTCACCCACAGTGACCACACCCAC  
 GGTGACCAGCCCTCACTACCCGACAGAGGTGGGCTCCCGCACTCGACCGAGGTGGACGAGTCCCTGTG  
 GTGCTTTGAGCAGGTGCTGCCGCCATCCGCCCCCAGTGAAGGTGGGCTGAGCCTCCGCTGCGTG  
 GCCCCGGGCGCGGCTCGGCTTCCCCACAGATGTGGACCTGTGCTGGTGTACCCCTGTGAATTTGA  
 GCATCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGTCCCCGGCAGCTCGAATGACAGCAGTGGCCCA  
 TCACAGGAACGGGCGAGGTGGCTGGGGGCGGAGAGACGCCACCCACATCGGTGAGCGAGTCCCTGCCCA  
 CCTGTCTGACTCGGATCCCGTGGCCCTGGCCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGGCTT  
 TGGAGTCCCTCGCCACGACCTTTGCTGACCCCTCAAGGTCCCCCACCCTGCCTGACCCATCCAGC  
 ATCTGCATGGTGGACCCGAGATGCTGCCCCCAAGACAGCACGCAACCGGAGAACGTGAGCCGACCC  
 CGGAAGCCCTGGCCCGCCCAACTCACGCGTGGCGCCCCCAAGCCACTCCAGTGGCTGCTGCCAAA  
 CCAAGGGGCTTGGTGGGACCGTGCCAGCCGACCACTCAGTGCCCGGAGTGAGCCAGTGAGAAGGG

Figure 36 part - 140

AGGCCGGGCACCCCTGTCCAGAAAGTCCTCAACCCCAAGACTGCCACTCGAGGCCCGTCGGGGTCAGCC  
 AGCAGCCGGCCCGGGGTGTAGCCACCCACCCCAAGTCCCGGTCTACCTGGACCTGGCCTACCTGCCCA  
 GCGGAGCAGCGCCACCTGGTGGATGAGGAGTTCTTCCAGCGCGTGCAGCGCTCTGTACGTCATCAG  
 TGGCCAGGACCAGCGCAAGGAGGAAGGCATGCGGGCCGTCTGGACGCGCTACTGGCCAGCAAGCAGCAT  
 TGGGACCGTGACCTGCAGGTGACCTGATCCCCACTTTGACTCGGTGGCCATGCATACGTGGTACGCAG  
 AGACGCACGCCCGGCACAGGCGCTGGGCATCACGGTGTGGGCAGCAACAGCATGGTGTCCATGCAGGA  
 TGACGCCTTCCCGGCCTGCAAGGTGGAGTTCTAGCCCCATCGCCGACACGCCCCCACTCAGCCCAGCCC  
 CCCTGTCCCTAGATTACGCCACATCAGAAATAAACTGTGACTACACTTG

Human VCY2IP1 mRNA sequence - var7 (public gi: 13623504) (SEQ ID NO: 220)

GGCAGGAGGCCCTGTATGATGAGCTCCGGAACCTTCTGTTGGACCCTGCCTCTCACAAGCTACTGGTGT  
 GGCTGGGCCCTGCCTGGAGGAGACGGGGGAGCTGCTGCTACAGACAGGGGGCTTCTCGCCTCACCCTTC  
 CTCCAGGTCCTGAAGGACAGAGATCCGGGACATCCTGGCCACCACGCCCCACCTGTGCAGCCGCCCCA  
 TACTACCATCACCTGCCACCTTCGGTGACTGGCTCAGCTGGCACCCTGTGCCTGGCCTTCAGGG  
 GGCGCTCCGGCTCCAGCTGCGGCTGAACCCCCCGGCGCAGCTGCCCAACTCTGAGGGCCTGTGCGAATTC  
 CTGGAGTACGTGGCTGAGTCTCTGGAGCCACCGTCCCCCTTCGAGCTGCTGGAGCCCCGACCTCCGGGG  
 GCTTCTCAGGCTGGGCGCGCCTGCTGCTACATCTTCCCTGGAGGCTCGGGGATGCCGCCTTCTTCGC  
 CGTCAATGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTCCAGTTTCTGGAAGCTGGTGGC  
 CACCTGGACCCGCTGGATGCCGTGCTGGTGACCCACCTGGCGCCGACAGCCTCCCCGGCCTCAACAGCC  
 TGCTGCGCGCAAACCTGGCGGAGCGCTCCGAGTGGCTGCTGGTGGGGCTCCTGGGACGACAGGCTGCG  
 CAGGCTCATCTCCCCAACCTGGGGGTCTGTCTTCAACGCTGCGAGGCCGCTCGCGGCTGGCGCGC  
 GGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCTGGCGCAGCTGGGCATCACGCCTCTGCCACTCAGCC  
 GCGGCCCGTGGCAGCCAAACCCACCGTGTCTTCGAGAAGATGGGCGTGGGCGGCTGGACATGTATGT  
 GCTGACCCCGCCTCCGCGCGCGCGAGCGCAGCTGGCCTGTGTGTGCGCCTGCTGGTGTGGCACC  
 GCGGCCCGCGGAGAAAGGTGGTGGCGCTGTCTTCCCCGGTTGACCCCGCCGCTGCCTCTCTGGACG  
 GCCTGGTCCGCTGCAGCACTTGAGTTCTGCGAGAGCCCGTGGTGACGCCCCAGGACCTGGAGGGGCC  
 GGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGACAGCTCGAAGAGAGAGGGCCTCTGGCCACC  
 CACCTAGACCTGGCCAGGAGCGCCTGGGGTGGCCCGCAAGGAGCCAGCACGGGTGAGGCCCCACGCA  
 AGACTGAGAAAGAAGCCAAAGACCCCGGGAGTTGAAGAAAGACCCAAACCGAGTGTCTCCCGGACCA  
 GCGCGGGAGGTGCGCCGGGACGCTCTTCTGTGCCCAACCTCAAGAAGACGAATGCCAGCGGCACCC  
 AAGCCCCGCAAAGCGCCAGCAGCTCCCACTCTGGCTTCCCGCGGTGGCAAATGGACCCCGCAGCCCCG  
 CCAGCTCCGATGTGGAGAAGCCAGCCCCCAGTGCGGCTGCGGCTCTCCGGCCTCCAGCTGGTGGC  
 CACGCCCAGCCTGGAGCTGGGGCCGATCCAGCCGGGAGGAGAAGGCACTGGAGCTGCCTTTGGCCGCC  
 AGCTCAATCCCAAGGCCACGCACACCTCCCTGAGTCCCACCGAGCCCCGAGAGGGCAGCGAGCGGC  
 TGTCTGAGCCCACTGCGGGGCGGGAGGCGGCGCAGACGCCTCACCCACAGTGACCAACCCACGGT  
 GACCACGCCCTCACTACCCGAGAGGTGGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTGTGGTG  
 TCCTTTGAGCAGGTGCTGCGCCATCCGCCCCACAGTGAGGCTGGGCTGAGCCTCCCGCTGCGTGGCC  
 CCGGGCGCGGCTCGGCTTCCCCACAGATGTGGACCTGTGCCTGGTGTACCCCTGTGAATTTGAGCA  
 TCGAAGGCGGTGCCAATGGCACCGGCACCTGCGTCCCCCGGAGCTCGAATGACAGCAGTGCCCCGTCA  
 CAGGAACGGGAGGTGGGCTGGGGGCGGAGGAGACGCCACCCACATCGGTGAGCGAGTCCCTGCCACCC  
 TGTCTGACTCGGATCCCGTGGCCCTGGCCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGGCTTTGG  
 AGTCCCTCGCCACGACCTTTGCTGACCCCTCAAGGTCCCCCACCAGTGCCTGACCCATCCAGCATC  
 TGATGGTGGACCCGAGATGCTGCCCCCAAGACAGCACGGCAAACGGAGAAGCTCAGCCGCACCCGGA  
 AGCCCTGGCCCGCCCCAACTCAGCGCTGCCGCCCCCAAAGCCACTCCAGTGGCTGCTGCCAAAACCAA  
 GGGCTTGTGTTGGGACCGTGCCAGCCGACCACTCAGTGCCCGAGTGAGCCAGTGAGAAGGGAGGC  
 CGGGCACCCCTGTCCAGAAAGTCTCAACCCCAAGACTGCCACTCGAGGCCCGTCGGGGTCAGCCAGCA  
 GCCGGCCCGGGGTGTACGCCACCCACCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCCAGCGG  
 GAGCAGCGCCACCTGGTGGATGAGGAGTTCTTCCAGCGCGTGCAGCGCTCTGTACGTCATCAGTGGC  
 CAGGACCAGCGCAAGGAGGAAGGCATGCGGGCCGTCTGGACGCGCTACTGGCCAGCAAGCAGCATTGGG  
 ACCGTGACCTGCAGGTGACCTGATCCCCACTTTCGACTCGGTGGCCATGCATACGTGGTACGCAGAGAC  
 GCACGCCCCGACAGGCGCTGGGCATCACGGTGTGGGCAGCAACAGCATGGTGTCCATGCAGGATGAC  
 GCCTTCCCGGCCTGCAAGGTGGAGTTCTAGCCCCATCGCCGACACGCCCCCACTCAGCCAGCCCGCCT  
 GTCCCTAGATTACGCCACATCAGAAATAAACTGTGACTACACTTGAAAAAAAAAAAAAAAAAAAA

Human VCY2IP1 mRNA sequence - var8 (public gi: 10434893) (SEQ ID NO: 221)

GAACCCCAAGTCCAGTTTCTGGAAGCTGGTGGCGCACCTGGACCGGTGGATGCCGTGCTGGTGACCCAC  
 CCTGGCGCCGACAGCCTCCCGGCCTCAACAGCCTGCTGCGCGCGCAAACCTGGCGGAGCGCTCCGAGGTGG  
 CTGCTGGTGGGGGCTCCTGGGACGACAGGCTGCGCAGGCTCATCTCCCCAACCTGGGGGTCTGTCTTCTT  
 CAACGCTTGCAGGCGCGCTGCGGGCTGGCGCGCGGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCCTG  
 GCGCAGCTGGGCATCACGCCTCTGCCACTCAGCCGCGGCCCCGTGCCAGCCAAACCCACCGTGTCTTCG  
 AGAAGATGGGCGTGGGCGGCTGGACATGTATGTGCTGCACCCGCCCTCCGCGGCGCGGAGCGCACGCT  
 GGCTCTGTGTGCGCCTGCTGGTGTGGCACCCCGCGGCCCCGGGAGAGGTGGTGGCGGTGCTGTTCT

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CCCGGTTGCACCCCGCCCGCTGCCTCCTGGACGGCCTGGTCCGCTGCAGCACTTGAGGTTCTGCGAG  
 AGCCCGTGGTGACGCCCCAGGACCTGGAGGGGCGGGGCGAGCCGAGAGCAAGAGAGCGTGGGCTCCCG  
 GGACAGCTCGAAGAGAGAGGGCCTCCTGGCCACCCACCCTAGACCTGGCCAGGAGCGCCCTGGGGTGGCC  
 CGCAAGGAGCCAGCACGGGCTGAGGCCCCACGCAAGACTGAGAAAGAAGCCAAGACCCCCCGGGAGTTGA  
 AGAAAGACCCCAAACCGAGTGTCTCCCGACCCAGCCGCGGGAGGTGCGCCGGGAGCCTCTTCTGTGCC  
 CAACCTCAAGAAGACGAATGCCAGGCGGCAACCAAGCCCCGCAAAGCGCCAGCACGTCCTTCTGTC  
 TTCCCGCCGGTGGCAAATGGACCCCGCAGCCCGCCAGCCTCCGATGTGGAGAAGCCAGCCCCCAGTG  
 CAGCCTGCGGCTCTCCGGCTCCAGCTGGTGGCCACGCCAGCCTGGAGCTGGGGCCGATCCCGAGCCG  
 GGAGGAGAAGGCACTGGAGCTGCCTTTGGCCGCCAGCTCAATCCCAAGGCCACGCACACCCTCCCCTGAG  
 TCCACCGGAGCCCCGAGAGGGCAGCGAGCGGCTGTGCTGAGCCCACTGCGGGCGGGGAGGCCGGG  
 CAGACGCTCACCCACAGTGACACACCCAGGTGACACGCCCTCACTACCCGAGAGGTGGGCTCCCC  
 GCACTCGACCGAGGTGGACGAGTCCCTGTGCGTGTCTTTGAGCAGGTGCTGCCGCCATCCGCCCCCACC  
 AGTGGGCTGGGCTGAGCTCCCGCTGCGTGGCCCCGGGCGCGGCTCGGCTTCCCCACACGATGTGG  
 ACCTGTGCCTGGTGTACCCCTGTGAATTTGAGCATCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGT  
 CCGCGGAGCTCGAATGACAGCAGTGCCCGGTACAGGAACGGGCGAGGTGGGCTGGGGCCGAGGAGACG  
 CCACCCACATCGGTGAGCGAGTCCCTGCCACCCTGTCTGACTCGGATCCCGTGCCTTGGCCCCCGGTG  
 CGGCAGACTCAGACGAAGACACAGAGGGCTTTGGAGTCCCTCGCCACGACCCCTTGCTGACCCCTCAA  
 GGTCCCCCACCAGTCCCTGACCCATCCAGCATCTGTCATGGTGGACCCCGAGATGCTGCCCCCAAGACA  
 GCACGGCAAACGGAGAAGCTCAGCCGACCCGGAAGCCCTGGCCCGCCCAACTCAGCGCTGCCGCC  
 CCAAAGCCACTCCAGTGGCTGCTGCCAAAACCAAGGGGCTTGCTGGTGGGGACCGTCCAGCCGACCACT  
 CAGTGGCCCGAGTGAGCCAGTGAGAAGGGAGGCCGGGACCCCTGTCCAGAAAGTCTCAACCCCCAAG  
 ACTGCCACTCGAGGCCCGTTCGGGGTTCAGCCAGCAGCCGGCCCGGGGTGTGAGCCACCCACCCAGTCCC  
 CGGTCTACCTGGACTGGCCTACCTGCCAGCGGAGCAGCGCCACCTGGTGGATGAGGAGCTCTTCCA  
 GCGCGTTCGCGCGCTCTGCTACGTATCAGTGGCCAGGACAGCGCAAGGAGGAAGGCATGCGGGCCGTC  
 CTGGACGCGCTACTGGCCAGCAAGCAGCATTTGGGACCGTGACCTGCAGGTGACCCTGATCCCCACTTTG  
 ACTCGGTGGCCATGCATACGTGGTACGCAGAGACGCACGCCCGGACCCAGGCGCTGGGCATCAGGTGTT  
 GGGCAGCAACAGCATGGTGTCCATGCAGGATGACGCCTTCCCGGCTTGCAAGGTGGAGTTCTAGCCCCAT  
 CGCCGACACGCCCCCACTCAGCCAGCCGCGCTGTCCCTAGATTAGCCACATCAGAAATAAAGTGTGA  
 CTAC

Human VCY2IP1 mRNA sequence - var9 (public gi: 7022843) (SEQ ID NO: 222)

CATCTCCCCAACCTGGGGTCTGTCTTCAACGCCTGCGAGGCCGCTGCGGCTGGCGCGCGGCGAG  
 GATGAGGCGGAGCTGCGCTGAGCCTCTGGCGCAGCTGGGCATCACGCCTCTGCCACTCAGCCGCGGCC  
 CCGTGCCAGCCAAACCCACCGTGTCTTTCGAGAAGATGGGCGTGGGCCGGCTGGACATGTATGTGTGCA  
 CCCGCCCTCCGCGGGCGCCGAGCGCACGCTGGCCTCTGTGTGCGCCCTGCTGGTGTGGCACCCGCGCG  
 CCCGCGGAGAAGGTGGTGCCTGTCTTCCCCGGTTGCACCCCGCCCGCTGCCTCCTGGACGGCCTGG  
 TCCGCTGCGAGCACTTGAGGTTCTTGCAGAGAGCCGTTGGTGCAGCCCCAGGACCTGGAGGGGCGGGGCG  
 AGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGGACAGCTCGAAGAGAGAGGGCCTCTGGCCACCCACCT  
 AGACCTGGCCAGGAGCGCCCTGGGGTGGCCCGAAGGAGCCAGCACGGGCTGAGGCCCCACGCAAGACTG  
 AGAAAGAAGCCAAGACCCCTGGGAGTTGAAGAAAGACCCCAACCCAGTGTCTCCGGACCCAGCCGCG  
 GGAGGTGCGCCGGGCGAGCCTCTTCTGTGCCCAACCTCAAGAAGACGAATGCCAGGCGGCACCCAAGCCC  
 CGCAAAGCGCCAGCACGTCCCACTTCTGGCTTCCCGCCGGTGGCAAATGGACCCCGAGCCCGCCAGCC  
 TCCGATGTGGAGAAGCCAGCCCCCAGTGCGAGCCTGCGGCTCTCCGGCCTCCAGCTGGTGGCCACGCC  
 CAGCCTGGAGCTGGGGCCGATCCAGCCGGGGAGGAGAAGGCACTGGAGCTGCCTTTGGCCGCCAGCTCA  
 ATCCCAAGGCCACGCACACCCCTCCCTGAGTCCACCCGAGCCCGCAGAGGGCAGCGAGCGGCTGTGCG  
 TGAGCCCACTGCGGGGCGGGGAGGCCGGCCAGACGCTCACCCACAGTGACCCACCCACGGTGACCAC  
 GCCCTCACTACCCGAGAGGTGGGCTCCCGCACTCGACCGAGGTGGACGAGTCCCTGTGCGTGTCTTT  
 GAGCAGGTGCTGCCGCCATCCGCCCCCAGTGAAGGTGGGCTGAGCCTCCCGCTGCGTGGCCCCCGGG  
 CGCGGCGCTCGGCTTCCCCACACGATGTGGACCTGTGCCTGGTGTACCCCTGTGAATTTGAGCATCGCAA  
 GCGGCTGCCAATGGCACCCGACCTGCGTCCCGCGGAGCTCGAATGACAGCAGTGCCCGGTACAGGAA  
 CGGGCAGGTGGGCTGGGGGCGAGGAGACGCCACCCACATCGGTGAGCGAGTCCCTGCCACCCCTGTCTG  
 ACTCGGATCCCGTGCCTTGGCCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGGCTTTGGAGTCCC  
 TCGCCACGACCCCTTTCCTGACCCCTCAAGGTCCCCCACCAGTGCCTGACCCATCCAGCATCTGCATG  
 GTGACCCCGAGATGCTGCCCCCAAGACAGCAGCGGCAACCGGAGAAGCTCAGCCGACCCGGAAGCCCC  
 TGGCCCCCCCCAATCACGCGCTGCCGCCCAAGGCACTCCAGTGGCTGCTGCCAAAACCAAGGGGCT  
 TGCTGGTGGGGACCGTGCCAGCCGACCACTCAGTGCCCGGAGTGAGCCAGTGAGAAGGGAGGCGGCA  
 CCCCTGTCCAGAAAGTCTCAACCCCAAGACTGCCACTCGAGGCCCGTTCGGGGTTCAGCCAGCAGCCGGC  
 CCGGGGTGTGAGCACCCCAACCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCCAGCGGGAGCAG  
 CGCCACCTGGTGGATGAGGAGTTCTTCAGCGCGTGCAGCGCTCTGCTACGTCATCAGTGGCCAGGAC  
 CAGCGCAAGGAGGAAGGCATGCGGGCCGTCTTGACCGCGCTACTGGCCAGCAAGCAGCATTGGGACCGTG  
 ACCTGCAGGTGACCTGATCCCCACTTTCGACTCGGTGGCCATGCATACGTGGTACGCAAGAGACGCACGC  
 CCGGCACAGGCGCTGGGCATCAGGTGTTGGGCAGCAACGGCATGGTGTCCATGCAGGATGACGCCCTTC  
 CCGGCTGCAAGGTGGAGTTCTAGCCCCATCGCCGACACGCCCCCACTCAGCCAGCCCGCCTGTCCCT

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AGATTCAGCCACATCAGAAATAAACTGTGACTACACTTG

Human VCY2IP1 Protein sequence - var1 (public gi: 22002953) (SEQ ID NO: 315)  
 MAAVAGSGAAAPSSLLLVGSEFGSPGLLTYVLEELERGIRSWDVPDGVNLDQLKVFVSRHSATFSS  
 IVKGQORSLHHRGDNLETLVLLNPSDKSLYDELRLNLLDPASHKLLVLAGLCLEETGELLQTGGFSPHHF  
 LQVLKDRDIRDILATTPPVQPPILTITCPTFGDWAQAPAVPGLQALRLQLRLNPPAQLPNSEGLCEF  
 LEYVAESLEPPSPFELLEPPPTSGGFLRLGRPCCYIFPGGLGDAFFAVNGFTVLVNGGSPKSSFWKLVR  
 HLDRVDAVLVTHPGADSLPGLNSLLRRKLAERSEVAAGGGSWDDRLRLISPNLGVVFFNACEAASRLAR  
 GEDEAELALSLLAQLGITPLPLSRGPVPAKPTVLFKMGVGRLDVYLHPPSAGAERTLASVALLVWHP  
 AGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREPVTTPQDLEGPGRAESKESVGSRDSSKREGLLAT  
 HPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELKDPKPSVSRTQPREVRAASSVNLKKTNAQAAP  
 KPRKAPSTSHSGFPPVANGPRSPSLRCGEASPPSAACGSPASQLVATPSLELGPIPAGEEKALELPLAA  
 SSIPRPRTPSPESHRSAPGSESLSLPLRGGEAGPDASPTVTTPVTTPSLPAEVGSPHSTEVDESLSV  
 SFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVLCLVSPCFEHRKAVPMAPAPASPGSSNDSSAR  
 QERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAADSDDETEGFGVPRHDPLDPLKVPPLPDPSI  
 CMVDPEMLPPKTAQTENVSRTRKPLARPNRSRAAPKATPVAAAKTKLAGGDRASRPLSARSEPSEKGG  
 RAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPVYLDLAYLPSGSSAHLVDEEFFQVRVRLCYVISG  
 QDQRKEEGMRAVLDAALLASKQHWRDLQVTLIPTFDSVAMHTWYAETHARHQAALGITVLGSNSMVMQDD  
 AFAACKVEF

Human VCY2IP1 Protein sequence - var2 (public gi: 21739763) (SEQ ID NO: 316)  
 PKMAAVAGSGAAAPSSLLLVGSEFGSPGLLTYVLEELERGIRSWDVPDGVNLDQLKVFVSRHSATF  
 SSIVKGQORSLHHRGDNLETLVLLNPSDKSLYDELRLNLLDPASHKLLVLAGPCLEETGELLQTGGFSPH  
 HFQVLKDRDIRDILATTPPVQPPILTITCPTFGDWAQAPAVPGLQALRLQLRLNPPAQLPNSEGLC  
 EFLEYVAESLEPPSPFELLEPPPTSGGFLRLGRPCCYIFPGGLGDAFFAVNGFTVLVNGGSPKSSFWKL  
 VRHLDRVDAVLVTHPGADSLPGLNSLLRRKLAERSEVAAGGGSWDDRLRLISPNLGVVFFNACEAASRL  
 ARGEDEAELALSLLAQLGITPLPLSRGPVPAKPTVLFKMGVGRLDVYLHPPSAGAERTLASVALLVWHP  
 HPAGPGEKVVRVLFPGCTPPAYLLDGLVRLQHLRFLREPVTTPQDLEGPGRAESKESVGSRDSSKREGLL  
 ATHPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELKDPKPSVSRTQPREVRAASSVNLKKTNAQA  
 APKPRKAPSTSHSGFPPVANGPRSPSLRCGEASPPSAACGSPASQLVATPSLELGPIPAGEEKALELPL  
 AASSIPRPRTPSPESHRSAPGSESLSLPLRGGEAGPDASPTVTTPVTTPSLPAEVGSPHSTEVDESLS  
 SVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVLCLVSPCFEHRKAVPMAPAPASPGSSNDSSA  
 RSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAADSDDETEGFGVPRHDPLDPLKVPPLPDPS  
 SICMVDPEMLPPKTAQTENVSRTRKPLARPNRSRAAPKATPVAAAKTKLAGGDRASRPLSARSEPSEK  
 GGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPVYLDLAYLPSGSSAHLVDEEFFQVRVRLCYVI  
 SGQDQRKEEGMRAVLDAALLASKQHWRDLQVTLIPTFDSVAMHTWYAETHARHQAALGITVLGSNSMVMQ  
 DDAFAACKVEF

Human VCY2IP1 Protein sequence - var3 (public gi: 21104446) (SEQ ID NO: 317)  
 MGVGRLDMYVLHPPSAGAERTLASVALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP  
 VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRPGQERPGVARKEPARAEAPRKTEKEAKAPRELKK  
 DPKPSVSRTQPREVRAASSVNLKKTNAQAAPKPRKAPSTSHSGFPPVANGPRSPSLRCGEASPPSAA  
 CGSPASQLVATPSLELGPIPAGEEKALELPLAASSIPRPRTPSPESHRSAPGSESLSLPLRGGEAGPD  
 ASPTVTTPVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVL  
 CLVSPCFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA  
 DSDDETEGFGVPRHDPLDPLKVPPLPDPSI CMVDPEMLPPKTAQTENVSRTRKPLARPNRSRAAPK  
 ATPVAAAKTKLAGGDRASRPLSARSEPSEKGGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPV  
 YLDLAYLPSGSSAHLVDEEFFQVRVRLCYVISGQDQRKEEGMRAVLDAALLASKQHWRDLQVTLIPTFDS  
 VAMHTWYAETHARHQAALGITVLGSNSMVMQDDAFAACKVEF

Human VCY2IP1 Protein sequence - var4 (public gi: 14250680) (SEQ ID NO: 318)  
 MGVGRLDMYVLHPPSAGAERTLASVALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP  
 VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELKK  
 DPKPSVSRTQPREVRAASSVNLKKTNAQAAPKPRKAPSTSHSGFPPVANGPRSPSLRCGEASPPSAA  
 CGSPASQLVATPSLELGPIPAGEEKALELPLAASSIPRPRTPSPESHRSAPGSESLSLPLRGGEAGPD  
 ASPTVTTPVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVL  
 CLVSPCFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA  
 DSDDETEGFGVPRHDPLDPLKVPPLPDPSI CMVDPEMLPPKTAQTENVSRTRKPLARPNRSRAAPK  
 ATPVAAAKTKLAGGDRASRPLSARSEPSEKGGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPV  
 YLDLAYLPSGSSAHLVDEEFFQVRVRLCYVISGQDQRKEEGMRAVLDAALLASKQHWRDLQVTLIPTFDS  
 VAMHTWYAETHARHQAALGITVLGSNSMVMQDDAFAACKVEF

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Human VCY2IP1 Protein sequence - var5 (public gi: 13938255) (SEQ ID NO: 319)  
 DTDSDSSTSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVLCLVSPCFEHRKAVPMAPAPASP  
 GSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAAADSDTEGFGVPRHDPLPDPLKV  
 PPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNRSRAAPKATPVAAAKTKGLAGGDRASRPLS  
 ARSEPSEKGRAPLSRKSSSTPKTATRGPSGSASSRPGVSATPPKSPVYLDLAYLPSGSSAHLVDEEFFQR  
 VRALCYVISGQDQRKEEGMRAVL DALLASKQHWRDLQVTLIPTFDSVAMHTWYAETHARHQALGITVLG  
 SNSMVMQDDAFAACKVEF

Human VCY2IP1 Protein sequence - var6 (public gi: 14042429) (SEQ ID NO: 320)  
 MAAVAGSGAAAAPSSLLLVVGSEFGSPGLLTYVLEELERGISWDVDPGVCNLDEQLKVFSRHSATFSS  
 IVKGQSRSLHHRGDNLETIVLLNPSDKSLYDELRLNLLDPASHKLLVLAGLCLEETGELLQTTGGFSPHHF  
 LQVLKDRDIRDILATTPPPVQPPILTITCPTFGDWAQAPAVPGLQALRLQLRLNPPAQLPNSGLCEF  
 LEYVAESLEPPSPFELLEPPPTSGGFLRLGRPCCYIFPGGLGDAFFAVNGFTVLVNGGSPKSSFWKLVR  
 HLDVRDAVLVTHPGADSLPGLNSLLRRKLAERSEVAAGGGSWDDRRLRLISPNLGVVFFNACEAASRLAR  
 GEDEAELALSLLAQLGITPLPLSRGPVPAKPTVLFKMGVGRLDMYVLHPPSAGAERTLASVCALLVWHP  
 AGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREPVTTPQDLEGPGRAESKESVGSRDSSKREGLLAT  
 HPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELKRDPKPSVSRTQPREVRRRAASSVPNLKKTNQAAP  
 KPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAACGPSASQLVATPSLELGPIPAGEEKALELPLAA  
 SSI PRPRTSPESHRSAPAESERLSLSPLRGGEAGPDASPTVTTPVTTPSLPAEVGSPHSTEVDESLSV  
 SFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVLCLVSPCFEHRKAVPMAPAPASPGSSNDSSARS  
 QERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAAADSDTEGFGVPRHDPLPDPLKVPPPLPDPSSI  
 CMVDPEMLPPQDSTANGERQPHPEAPGPPQLTRCRPQSHSSGCCQNGACWGWGPCQPTTQCPE

Human VCY2IP1 Protein sequence - var7 (public gi: 13623505) (SEQ ID NO: 321)  
 MGVGRLDMYVLHPPSAGAERTLASVCALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP  
 VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRGQERPGVARKEPARAEAPRKTEKEAKTPRELKK  
 DPKPSVSRTQPREVRRRAASSVPNLKKTNQAAPKPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAA  
 CGSPASQLVATPSLELGPIPAGEEKALELPLAASSI PRPRTSPESHRSAPAESERLSLSPLRGGEAGPD  
 ASPTVTTPVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVL  
 CLVSPCFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA  
 DSDTEGFGVPRHDPLPDPLKVPPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNRSRAAPK  
 ATPVAAAKTKGLAGGDRASRPLSARSEPSEKGRAPLSRKSSSTPKTATRGPSGSASSRPGVSATPPKSPV  
 YLDLAYLPSGSSAHLVDEEFFQRVRALCYVISGQDQRKEEGMRAVL DALLASKQHWRDLQVTLIPTFDS  
 VAMHTWYAETHARHQALGITVLGSNSMVMQDDAFAACKVEF

Human VCY2IP1 Protein sequence - var8 (public gi: 10434894) (SEQ ID NO: 322)  
 MGVGRLDMYVLHPPSAGAERTLASVCALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP  
 VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRGQERPGVARKEPARAEAPRKTEKEAKTPRELKK  
 DPKPSVSRTQPREVRRRAASSVPNLKKTNQAAPKPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAA  
 CGSPASQLVATPSLELGPIPAGEEKALELPLAASSI PRPRTSPESHRSAPAESERLSLSPLRGGEAGPD  
 ASPTVTTPVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVL  
 CLVSPCFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA  
 DSDTEGFGVPRHDPLPDPLKVPPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNRSRAAPK  
 ATPVAAAKTKGLAGGDRASRPLSARSEPSEKGRAPLSRKSSSTPKTATRGPSGSASSRPGVSATPPKSPV  
 YLDLAYLPSGSSAHLVDEEFFQRVRALCYVISGQDQRKEEGMRAVL DALLASKQHWRDLQVTLIPTFDS  
 VAMHTWYAETHARHQALGITVLGSNSMVMQDDAFAACKVEF

Human VCY2IP1 Protein sequence - var9 (public gi: 7022844) (SEQ ID NO: 323)  
 MGVGRLDMYVLHPPSAGAERTLASVCALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP  
 VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRGQERPGVARKEPARAEAPRKTEKEAKTPRELKK  
 DPKPSVSRTQPREVRRRAASSVPNLKKTNQAAPKPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAA  
 CGSPASQLVATPSLELGPIPAGEEKALELPLAASSI PRPRTSPESHRSAPAESERLSLSPLRGGEAGPD  
 ASPTVTTPVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVL  
 CLVSPCFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA  
 DSDTEGFGVPRHDPLPDPLKVPPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNRSRAAPK  
 ATPVAAAKTKGLAGGDRASRPLSARSEPSEKGRAPLSRKSSSTPKTATRGPSGSASSRPGVSATPPKSPV  
 YLDLAYLPSGSSAHLVDEEFFQRVRALCYVISGQDQRKEEGMRAVL DALLASKQHWRDLQVTLIPTFDS  
 VAMHTWYAETHARHQALGITVLGSNSMVMQDDAFAACKVEF

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Unigene Name: SPG20 Unigene ID: Hs.118087

Human SPG20 mRNA sequence - var1 (public gi: 28436884) (SEQ ID NO: 367)

AGTGTAAAGGAGTGGGAGCTGGTCCGTGCCGCGCGCGCAGGGAGCTCTCGAGGCAACGCCGGGGC  
GCCCGAGGTCTGGAAGGCGCAGAAATGGAGCAAGAGCCACAAAATGGAGAACCTGCTGAAATTAAAGATCA  
TCAGAGAAGCATATAAGAAGGCCTTTTTATTTGTTAACAAAGGTCTGAATACAGATGAATTAGGTGAGAA  
GGAAGAAGCAAAGAACTACTATAAGCAAGGAATAGGACACCTGCTCAGAGGGATCAGCATTTCATCAAAA  
GAGTCTGAACACACAGGTACTGGGTGGGAATCTGCTAGACAGATGCACAGAAAATGAAAGAACTCTAC  
AGAATGTACGCACCAGGCTGGAAATCTAGAGAAGGGTCTTGCCACTTCTCTGCAGAAATGATCTTCAGGA  
GGTGCCCAAGTTATATCCAGAATTTCCACCTAAAGACATGTGTGAAAAATTACCAGAGCCTCAGTCTTTT  
AGTTCAAGCTCCTCAGCATGCTGAAGTAAATGGAACACCTCAACTCCAAGTGCAGGGGCAGTTGCTGCAC  
CTGCTTCTCTGTCTTTACCATCACAAAGTTGTCCAGCAGAAGCTCCTCCTGCTTATACTCCTCAAGCTGC  
TGAAGTCACTACACTGATCCTATGGAACAGATTCTGGGGAGTTTTCATCAGTTGGAGAGGAGTTTAT  
AGGAATCATTCTCAGCCACCGCCTCTTGAGACCTTAGGGCTGGATGCAGATGAATTGATTTTGATACCAA  
ATGGAGTACAGATTTTGTAAATCCTGCAGGGGAGGTTAGTGCACCTTCGTATCCTGGGTACCTTCG  
AATTGTGAGGTTTTTGGATAAATTTCTCGATACGGTTCTAAACCGTCTCCCGGGTTTTCTCAGGTTTGT  
GACTGGTTATATCCTCTAGTTCCTGATAGATCTCCGGTCTGAAATGTACTGCGGGAGCCTACATGTTTC  
CTGATACAATGCTACAAGCAGCAGGATGCTTGTGGGGGTCTGCTCTCTGAGTTACCAGAGGATGA  
TAGAGAGCTCTTTGAGGATCTGTTAAGGCAAAATGTCTGACCTTCGGCTCCAGGCCAACTGGAACAGAGCA  
GAAGAAGAAATGAATCCAAATCCCTGGAAGAACTAGACCCTCCTCTGACCAACTAAAAGAAGCCTCTG  
GCACCTGATGTGAACAGTTGGACCAAGGCAATAAGGATGTACGTACATAAAGGAAAACGTGGAAAAAGGGC  
TAAAGATACTTCAAGTGAAGAAGTTAACCTGAGTCACATTGTACCATGTGAGCCAGTTCAGAAAGAAAAG  
CCAAAAGAATTACATGAATGGAGTGAAGAAAGTGGCTCACAACTTTTGTGAGGTGCTTCTGCGGTGAGTT  
GGGGTTTAGTCAAAGGTGCTGAGATTACTGGTAAGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGAGCG  
GATTCAACCAGAAGAAAAACCCGTGGAAGTTAGTCCAGCTGTACCAAGGGACTTTATATAGCGAAGCAA  
GCTACAGGAGGAGCAGCAAAAGTCACTCAGTTCCCTGGTTGATGGAGTTTGCACGTGTAGCAAATTGCGTTG  
GAAAAGAACTAGCTCCACATGTCAAGAAGCATGGAAGCAAACTTGTTCAGAAATCTCTTAAAAAAGACAA  
AGATGGGAAATCTCCTCTGGATGGTGTATGGTTGTAGCAGCGAGTAGTGTTCAGGATTTTCAACTGTC  
TGCAAGGATTGGAATGTGCAGCTAAATGCATCGTTAACATGTTCAGCAGAAACTGTACAAACTGTCA  
GATACAAATACGGATATAATGCAGGAGAAGCTACCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGT  
AACTGCCTACAATATTAACAACATTGGTATCAAAAGCAATGGTGAAGAAAATGCAACACAAACAGGACAC  
ACTCTCCTTGAGGACTATCAGATAGTTGATAATTCTCAGAGGGAAAATCAAGAAGGAGCAGCAAAATGTCA  
ACGTGAGAGGGGAGAAGGATGAGCAGACGAAGGAAGTAAAGGAGGCAAAGAAGAAAGATAAATGATGAAG  
TGCTGGGAATCACTTATACCAAGCCTTATGAAATGGATGAAATTTTGTAAATAGGCAAATGTGGAATT  
CCTCACAGATTAACCAGTATTTTTTAAATGTATTCTTCTACAAATTAACCTTTCATAAATTTTATGGCA  
TGTCTTCTATTTTAAAGGAAAAGAATAAGTATTCTTCATCTGGCCTTAGAAATGTGAAGTTATATTCTC  
AAGTTTATTTTTTTTCCAAGTGTAGCTAAAATATTTTTGTCAGGTAAAATAAAGCTGATAGTACATGTGTTG  
TTCAAACCTTGTAAACCTAATATGAACATTTTTTATATCTGCTGTCTTTCAGAAGGCAAATAGGAAAC  
TATATATTTGCTTAAAAATTGGCATTAGTAACCTTAATCTTTTTATAGAAGGAATGACTTAAAGTATT  
GTCCCTCTTTTTGCACTAATTGTGGATTTTTTGTAGTGCTTCTCAAAATTTTCAGTGTGTAAGCTAAAC  
AAAACTAAAACTAAGAATTCTCAAAAAGACTTGTTCAAAACAGGGAAGACTGATGAAAAGTAAATGG  
ACTACTTTTGTAACTTACCTGTTTGTAGGAAATGGAATGGTTTCTTTGATTAAATGAATAAAATAG  
ATTATTACGTCTTTTGTATTGAGACTGTATTGTTATGAGCCTAGGAAATTTGGGAACATGATTGTATTGT  
ATTAAATTCGAAGTGATTATTATCAGCTTAATTGGATTAAAAAAGTACTTCAAGAAATTAAAAAA  
AAAAA

Human SPG20 mRNA sequence - var2 (public gi: 7023530) (SEQ ID NO: 368)

AGGGAGCTCTCGAGGCAACGCCGGGCGCCGAGGTCTGGAAGGCGCAGAAATGGAGCAAGAGCCACAAA  
ATGGAGAACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCTTTTTATTTGTTAACAAAGG  
TCTGAATACAGATGAATTAGGTGAGAAGGAAGAAGCAAGAACTACTATAAGCAAGGAATAGGACACCTG  
CTCAGAGGGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCTGGGTGGGAATCTGCTAGACAGA  
TGCAACAGAAAAATGAAGAACTCTACAGAATGTACGCACCAGGCTGGAAATCTAGAGAAGGGTCTTGC  
CACTTCTCTGCAGAAATGATCTTCAGGAGGTGCCCAAGTTATATCCAGAATTCCACCTAAAGACATGTGT  
GAAAAATTACCAGAGCCTCAGTCTTTTAGTTCAGCTCCTCAGCATGCTGAAGTAAATGGAACACCTCAA  
CTCCAAGTGCAGGGGAGTTGCTGCACCTGCTTCTGTCTTTACCATCACAAAGTTGTCCAGCAGAAGC  
TCCTCCTGCTTATACTCCTCAAGCTGCTGAAGGTCACTACACTGTATCCTATGGAACAGATTCTGGGGAG  
TTTTCATCAGTTGGAGAGGAGTTTATAGGAATCATTCTCAGCCACCGCCTCTTGAGACCTTAGGGCTGG  
ATGCAGATGAATTGATTTTGTATACCAATGGAGTACAGATTTTTTTTGTAAATCCTGCAGGGGAGGTTAG  
TGCACCTTCGTATCCTGGGTACCTTCGAATTGTGAGGTTTTTGGATAATTCTCTCGATACGGTTCTAAAC  
CGTCTCCCGGGTTTTCTCAGGTTTGTGACTGGTTATATCCTCTAGTTCTGTATAGATCTCCGGTTCTGA  
AATGTACTGCGGGAGCCTACATGTTTCTGATACAATGCTACAAGCAGCAGGATGCTTTGTGGGGGTCTG  
CCTGTCTCTGAGTTACCAGAGGATGATAGAGAGCTCTTTGAGGATCTGTTAAGGCAATGTCTGACCTT

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CGGCTCCAGGCCAACTGGAACAGAGCAGAAGAAGAAATGAATTCCAAATCCCTGGAAGAACTAGACCCT  
 CCTCTGACCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACAGTTGGACCAAGGCAATAAGGATGTACG  
 TCATAAAGGAAAACGTGGAAGAGGGCTAAAGATACTTCAAGTGAAGAAGTTAACCTGAGTCACATTGTA  
 CCAATGTGAGCCAGTTCCAGAAGAAAAGCCAAAAGATTACCTGAATGGAGTGAAAAAGTGGCTCACAACA  
 TTTTGTGAGGTATTACAGTAATGTTAATTTTTTCCCTGTATGACATTAAGCCTTTGGAACCAATAAAG  
 ATATTGTTTATTAGGGAATACTGAGAAAGATAATTTTTGTATTTTGGTTTTAAATGATCAATTTAGAAA  
 TAAATGTAGAAGGAAGTCTCTTTTGAACATCAGATATTGTTCATATAAGTATAAAATTTCTTCCGGCCTA  
 TTATTCTGTTTTACTATTGGGAAAATGGATAGTGAAAAGCTTCAGGAATCTTCAAATCTTAATAGTTCT  
 GAATCTAAAATTAGTTATGTTTCGTTTCCCCTTTGAAGCTCCCTCTTAACCTCCCCCTACCCCTGTCCCTC  
 AGCTGTGGTCTGAATGTGTCCCTTCAAATTCATATATTGAAATCCTAACCCCTGAGGTGATGGTTTTAG  
 GAGGTGGGGCCTTTGGAAGGTGATTAGGTTCATGAGGAGGAGCCCTCATCAATGGGATTAGTCCCTTATA  
 AAAGAGATCCCAAAGAGCTGCCTTGTCCCTTTCACTATGTGAGGAAGCAGTAAGAAGGTGTCTATTCTATG  
 AACCAGGAAGTGGGCCCTCACCAGAGACCAAATGTACCAGCACCTTAGTCTTGTACTTCCCAGCCTCTA  
 GAATTGTGAGAAATAAATTTTTGTTGTTAAT

Human SPG20 mRNA sequence - var3 (public gi: 7023938) (SEQ ID NO: 369)

GATAATTCTCTCGATACGGTTCTAAACCGTCTCCCGGGTTTCTTCAGGTTTGTGACTGGTTATATCCTC  
 TAGTTCTGTATAGATCTCCGGTTCTGAAATGTACTGCGGAGCCTACATGTTTCTGTATCAATGCTTACA  
 AGCAGCAGGATGCTTTGTGGGGTCTGCTCCTCTGAGTTACAGAGGATGATAGAGAGCTCTTTGAG  
 GATCTGTTAAGGCAAATGTCTGACCTTCGGCTCCAGGCCAACTGGAACAGAGCAGAAGAAGAAAATGAAT  
 TCCAAATCCCTGGAAGAACTAGACCCTCCTCTGACCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACA  
 GTTGGACCAAGGCAATAAGGATGTACGTCATAAAGGAAAACGTGGAAGGAGGGCTAAAGATACTTCAAGT  
 GAAGAAGTTAACTGAGTCACATTGTACCATGTGAGCCAGTTCCAGAAGAAAAGCCAAAAGAAATTACCTG  
 AACGGAGTGAAAAGTGGCTCACAACATTTTGTGAGGTGCTTCTGGGTGAGTTGGGGTTAGTCAAAGG  
 TGCTGAGATTACTGGTAAGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGAGCGGATTCAACCAGAAGAA  
 AAACCCGTGGAAGTTAGTCCAGCTGTCAACAAGGAGCTTTATATAGCGAAGCAAGCTACAGGAGGAGCAG  
 CAAAAGTCAGTCAGTTTCTGGTTGATGGAGTTTGCACTGTAGCAAATTGCGTTGGAAGAAAGTACTGCTC  
 ACATGTCAAGAAGCAGTGAAGCAAACCTGTTCCAGAATCTCTTAAAAAGACAAAGATGGGAAATCTCCT  
 CTGGATGGTGTATGGTTGTAGCAGCAAGTAGTGTTCAGGATTTTCACTGTCTGGCAAGGATTGGAAT  
 GTGCAGCTAAATGCATCGTTAACAATGTTTTCAGCAGAACTGTACAACTGTGAGATAACAAATACGGATA  
 TAATGCAGGAGAAGCTACCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGTAAGTGCCTACAATATT  
 AACAACATTGGTATCAAAGCAATGGTGAAGAAAACCTGCAACACAAACAGGACACACTCTCCTTGAGGACT  
 ATCAGATAGTTGATAATTCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAA  
 GGGTGAGCAGACGAAGGAAGTAAAGGAGGCAAGAAGATAAATGATGAAGTGCTGGGAATCACTTA  
 TACCAAAGCCTTATGAAATGGATGAAATTTTGTAAATAGGCAAATGTGGAATTCCTCAGATTAACCA  
 GTATTTTTTAAATGTATTTCATTCACAAATTAACCTTTCATAAATTTTATGGCATGTCTTCTATTTAAAA  
 GGAAAGAATAAGTATTCTTGCACTCTGGCCTTAGAAATGTGAAGTTATATTCTCAAGTTTATTTTTTTCC  
 AAGTGTAGCTAAAATATTTTTCAGGTAAAATAAAGCTGATAGTACATGTGTTGTTCAAACCTTGTTTAA  
 CCTAATATTGAACATTTTTTATATCTGCTGCTTTTTCAGAAGGCAAATAGGAACTATATATTTGCTTAA  
 AATTGGCATTTAGTAACCTTAATCTTTTATAGAAGGAATGACTTAAAGTATTGTCCCTCTTTTGTGCA  
 CTAATTGTGGATTTTTTTAGATGCTTCTCAAATTTTCAGTGTGTAAGCTAAACAAAACCTAAACCTAAG  
 AATTCTCAAAAAAAGCTTGTTCAAAAAGGAAAGCTGATGAAAAGTAAATGGACTACTTTTGTAACTT  
 ACCTGTTTGTAGGAAATGGAATGGTCTCTTTGATTAAAAATGAATAAAAAATAGATTATTACGTC

Human SPG20 mRNA sequence - var4 (public gi: 16553694) (SEQ ID NO: 370)

GTGCATGTTTTCTTCAGTCTCGAAGGAAATCATAAGTGATTGCCCCAAAAGGATTGCTGTTGAAAATG  
 GAGCAAGAGCCACAAAATGGAGAACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCCTTTT  
 TATTTGTTAACAAGGTCTGAATACAGATGAATTAGGTGAGAAGGAAGAAGCAAAGAAGTACTATAAGCA  
 AGGAATAGGACACCTGCTCAGAGGGATCAGCATTTTCATCAAAAGAGTCTGAACACACAGGTCTGGGTGG  
 GAATCTGCTAGACAGATGCAACAGAAAATGAAGAAACTCTACAGAATGATCTTCGTATCCTGGGTACCT  
 TCGAATTGTGAGGTTTTTGGATAATTCTCTCGATACGGTTCTAAACCGTCTCCCGGGTTCTTTCAGGTT  
 TGTGACTGGTTATATCCTCTAGTTCCTGATAGATCTCCGGTTCTGAAATGTACTGCGGGAGCCTACATGT  
 TTCCTGTATCAATGCTACAAGCAGCAGGATGCTTTGTGGGGTCTGCTCTCTCTGAGTTACCAGAGGA  
 TGATAGAGAGCTCTTTGAGGATCTGTTAAGGCAAATGTCTGACCTTCGGCTCCAGGCCAACTGGAACAGA  
 GCAGAAGAAGAAAATGAATCCAAATCCCTGGAAGAACTAGACCCTCCTCTGACCAACTAAAAGAAGCCT  
 CTGGCACTGATGTGAAACAGTTGGACCAAGGCAATAAGGATGTACGTGATAAAGGAAAACGTGGAAGAA  
 GGCTAAAGATACTTCAAGTGAAGAAGTTAACTGAGTCACATTGTACCATGTGAGCCAGTTCCAGAAGAA  
 AAGCCAAAAGAAATTACCTGAATGGAGTGAAGAAAGTGGCTCACAACATTTTGTGAGGTGCTTCTGGGTGA  
 GTTGGGGTTTTAGTCAAAGGTGCTGAGATTACTGGTAAGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGA  
 GCGGATTCAACAGAGAGAAAACCCGTGGAAGTTAGTCCAGCTGTACCAAGGGACTTTATATAGCGAAG  
 CAAGCTACAGGAGGAGCAGCAAAAGTCAGTCACTTCTGGTTGATGGAGTTTGCATGTAGCAAATTCGG  
 TTGGAAGAAGAACTAGCTCCACATGTCAAGAAGCATGGAAGCAAACCTGTTCCAGAATCTCTTAAAAAGA

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CAAAGATGGGAAATCTCCTCTGGATGGTGCTATGTTGTAGCAGCAAGTAGTGTTC AAGGATTTTCAACT  
GTCTGGCAAGGATTGGAATGTGCAGCTAAATGCATCGTTAACAATGTTTCAGCAGAACTGTACAACTG  
TCAGATACAAATACGGATAATGCAGGAGAAGCTACCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCG  
TAATGCGCTACAATATTGACAAACATTGGTATCAAAGCAATGGTGAAGAAAACTGCAACACAAACAGGACA  
CACTCTCCTTGAGGACTATCAGATAGTTGATAATTCTCAGAGGGAAAAATCAAGAAGGAGCAGCAAATGTC  
AACGTGAGAGGGGAGAAGGATGAGCAGACGAAGGAAGTAAAGGAGGCAAGAAAGATAAATGATGA  
GTGCTGGGAATCACTTATACCAAAGCCTTATGAAATGGATGAAATTTTGTAAATAGGCAATGTGGAAT  
TCCTCAGAGATTAACCAAGTATTTTTTAAATGTATTCATTCTACAAATTAACCTTTCATAAATTTTATGGC  
ATGCTTCTATTTTAAAAGGAAAAGAATAAGTATCTTGCATCTGGCCTTAGAAATGTGAAGTTATATTCT  
CAAGTTTATTTTTTCCAAGTGTAGCTAAAATATTTTTGCAGGTAAAATAAAGCTGATAGTACATGTGTT  
GTTCAAACCTTGTGTTAAACCTAATATTGAACATATTTTATATCTGCTGTCTTTCAGAAGGCAAAATAGGAAA  
CTATATATTGCTTAAAAATTGGCATTATTAGTAACCTTAATTCTTTTATAGAAGGAATGACTTAAAGTAT  
TGTCCTCTCTTTTGCCTAATTGTGGATTTTTTATAGATGCTTCTCAAATTTTTCAGTGTGTAAGCTAAA  
CAAAACTAAACTAAGAAATCTCAAAAAAATCTGTTCAAAACAGGGAAAGACTGATGAAAAGTAAATG  
GACTACTTTTGTAACTTACCTGTTTGTAGGAAATGGAATGGTCTCTTTGATTTAAATGAATAAAAAATA  
GATTATTACGTC

# Human SPG20 mRNA sequence - var5 (public gi: 21654722) (SEQ ID NO: 371)

ATGGAGCAAGAGCCACAAAATGGAGAACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCT  
TTTTATTTGTTAACAAAGGTCTGAATACAGATGAATTAGGTGAGAAGGAAGAAGCAAGAAGTACTATAA  
GCAAGGAATAGGACACCTGCTCAGAGGGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCTGGG  
TGGGAATCTGCTAGACAGATGCAACAGAAAATGAAAGAACTCTACAGAATGTACGCACCAGGCTGGAAA  
TTCATAGAGAAGGTCTTGCCACTTCTCTGCAGAATGATCTTCAGGAGGTGCCAAGTTATATCCAGAT  
TCCACCTAAAGACATGTGTGAAAAATTACCAGAGCCTCAGTCTTTTAGTTTCAGCTCCTCAGCATGTGAA  
GTAAATGGAACACCTCAACTCCAAGTGCAGGGGAGTTGCTGCACCTGCTTCTGTCTTTACCATCAC  
AAAGTTGTCCAGCAGAAGCTCCTCCTGCTTATACTCCTCAAGCTGCTGAAGGTCACCTACACTGTATCCTA  
TGGAACAGATTCGGGGAGTTTTTCATCAGTTGGAGAGGAGTTTTATAGGAATCATTCTCAGCCACCGCCT  
CTTGAGACCTTAGGGCTGGATGCAGATGAATTGATTTTGATACCAAATGGAGTACAGATTTTTTTTGTA  
ATCCTGCAGGGGAGGTTAGTGCACCTTCGTATCCTGGGTACCTTCGAATTGTGAGGTTTTTGGATAATTC  
TCTCGATACGGTTCTAAACCGTCTCCCGGGTTTCTTCAGGTTTGTGACTGGTTATATCCTCTAGTTCT  
GATAGATCTCCGGTCTGAAATGTACTGCGGGAGCCTACATGTTCTCTGATACAAATGCTACAAGCAGCAG  
GATGCTTTGTGGGGTCTGCTCTGCTCTGAGTTACCAGAGGATGATAGAGAGCTCTTTGAGGATCTGTT  
AAGGCAATGTCTGACCTTCGGCTCCAGGCCAATGGAACAGAGCAGAAGAAGAAAATGAATTCAAATC  
CCTGGAAGAACTAGACCTCCTCTGACCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACAGTTGGACC  
AAGGCAATAAGGATGTACGTATAAAGGAAAACGTGGAAAAAGGGCTAAAGATACTTCAAGTGAAGAAGT  
TAACCTGAGTCACATTGTACCATGTGAGCCAGTTCAGAAAGAAAGCCAAAAGAATTACCTGAATGGAGT  
GAAAAAGTGGCTCACAACATTTTGTCAAGTGCTTCTGGGTGAGTTGGGGTTTGTAGTCAAAGGTGCTGAGA  
TTACTGGTAAGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGAGCGGATTCAACCAGAAGAAAAACCGGT  
GGAAGTTAGTCCAGTGTGACCAAGGGACTTTATATAGCGAAGCAAGCTACAGGAGGAGCAGCAAAAGTC  
AGTCAGTTCTGGTTGATGGAGTTTGCACCTGTAGCAAATTCGCTTGGAAAAGAACTAGCTCCACATGTCA  
AGAAGCATGGAAGCAAATTTGTTCCAGAATCTCTTAAAAAGACAAAGATGGGAAATCTCCTCTGGATGG  
TGCTATGGTTGTAGCAGCAAGTAGTGTCAAGGATTTTCAACTGTCTGGCAAGGATTGGAATGTGCAGCT  
AAATGCATCGTTAACAATGTTTCAGCAGAACTGTACAACTGTGATACAAATACGGATATAATGCAG  
GAGAAGCTACCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGTAACTGCCTACAATATTAAACAACAT  
TGGTATCAAAGCAATGGTGAAGAAAACGTGCAACACAAACAGGACACACTCTCCTTGAGGACTATCAGATA  
GTTGATAATTCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAAGGATGAGC  
AGACGAAGGAAGTAAAGGAGGCAAGAAAGATAAATGA

# Human SPG20 mRNA sequence - var6 (public gi: 22074831) (SEQ ID NO: 372)

GCGGCCGCGCAGGGAGCTCTCAGAGCAACGCCGGGGCGCCGAGGTCTGGAAGGCGCAGAAATGGAGCAA  
GAGCCACAAAATGGAGAACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCTTTTTATTTG  
TTAACAAGGTCTGAATACAGATGAATTAGGTGAGAAGGAAGAAGCAAGAAGTACTATAAGCAAGGAAT  
AGGACACCTGCTCAGAGGGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCTGGGTGGGAATCT  
GCTAGACAGATGCAACAGAAAATGAAAGAACTCTACAGAATGTACGCACCAGGCTGGAAATTTAGAGA  
AGGGTCTTGCCACTTCTCTGCAGAATGATCTTCAGGAGGTGCCAAGTTATATCCAGAATTTCCACCTAA  
AGACATGTGTGAAAAATACCAGAGCCTCAGTCTTTAGTTTCAGCTCCTCAGCATGTGAAGTAAATGGA  
AACACCTCAACTCCAAGTGCAGGGGAGTTGCTGCACCTGCTTCTGTCTTTACCATCACAAAGTTGTC  
CAGCAGAAGCTCCTCCTGCTTATACTCCTCAAGCTGCTGAAGGTCACTACACTGTATCCTATGGAACAGA  
TTCTGGGGAGTTTTTCATCAGTTGGAGAGGAGTTTTATAGGAATCATTCTCAGCCACCGCCTCTTGAGACC  
TTAGGGCTGGATGCAGATGAATTGATTTTGATACCAAATGGAGTACAGATTTTTTTTGTAAATCCTGCGAG  
GGGAGGTTAGTGCACCTTCGTATCCTGGGTACCTTCGAATTTGTGAGGTTTTTGGATAATTTCTCGATAC  
GGTTCTAAACCGTCTCCCGGGTTTCTTCAGGTTTGTGACTGGTTATATCCTCTAGTTCTCTGATAGATCT

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CCGTTCTGAAATGTACTGCGGGAGCCTACATGTTTCTGATACAATGCTACAAGCAGCAGGATGCTTTG  
 TGGGGTTCGTCTCTGCTGAGTTACCAAGAGGATGATAGAGAGCTCTTTGAGGATCTGTTAAGGCAAAAT  
 GTCTGACCTTCGGCTCCAGGCCAACTGGAACAGAGCAGAAGAAGAAAATGAATCCAAATCCCTGGAAGA  
 ACTAGACCCTCTCTGACCAACTAAAAGAGCCTCTGGCACTGATGTGAAACAGTTGGACCAAGGCAATA  
 AGGATGTACGTCATAAAGGAAAACGTGGAAGGCTAAAGATACTTCAAGTGAAGAAGTTAACCTGAG  
 TCACATTGTACCATGTGAGCCAGTTCAGAGAAGAAAAGCCAAAAGAATTACCTGAATGGAGTGAAAAAGTG  
 GCTCACAACATTTTGTGAGGTGCTTCTGGGTGAGTTGGGGTTTAGTCAAAGGTGCTGAGATTACTGGTA  
 AGGCAATCCAGAAAGGTGCTTCTAACTCCGAGAGCGGATTCAACCAGAAGAAAACCCGTGGAAGTTAG  
 TCCAGCTGTACCAAGGGACTTTATATAGCGAAGCAAGCTACAGGAGGAGCAGCAAAAGTCAGTCAGTTC  
 CTGGTTGATGGAGTTTGCACTGTAGCAAATTGCGTTGGAAAAGAACTAGCTCCACATGTCAAGAAGCATG  
 GAAGCAAACCTGTTCCAGAATCTCTTAAAAAGACAAAGATGGGAAATCTCCTCTGGATGGTGCTATGGT  
 TGTAGCAGCAAGTAGTGTTCAGGATTTCAACTGTCTGGCAAGGATTGGAATGTGAGCTAAATGCATC  
 GTTAACAATGTTTCAGCAGAACTGTACAAACTGTACAACTGATACAAATAACGGATATAATGCAGGAGAAGCTA  
 CCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGTAACTGCCTACAATATTAACAACATTGGTATCAA  
 AGCAATGGTGAAGAAAACCTGCAACACAAACAGGACACACTCTCCTTGAGGACTATCAGATAGTTGATAAT  
 TCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAAGGATGAGCAGACGAAGG  
 AAGTAAGGAGGCAAGAGAAGATAAATGATGAAGTGTGGGAATCACTTATACCAAAGCCTTATGAA  
 ATGGATGAAATTTTGTAAATAGGCAAAATGTGGAATTCCTCACAGATTAACCAAGTATTTTTTAAATGTAT  
 TCATTCTACAAATTAACCTTTTATAAATTTTATGGCATGCTTCTATTAAAAAGGAAAAGAATAAGTATT  
 CTTGCATCTGGCCTTAGAAATGTGAAGTTATATTCTCAAGTTATTTTTTTTCCAAGTGTAGCTAAAATAT  
 TTTTGCAGGTAAAATAAAGCTGATAGTACATGTGTTGTTCAACCTTGTTAAACCTAATATTGAACCTATT  
 TTTATATCTGCTGCTTTTCAAGGCAAAATAGGAACTATATATTGCTTAAAAATTTGGCATTTAGTAAC  
 CTTAATCTTTTATAGAAGGAATGACTTAAAGTATTGTCCCTCTTTTGCCTAATTGTGGATTTTTT  
 TAGATGCTTCTCAAATTTTCACTGTGTAAGCTAAACAAAACTAAACTAAGAATTTCTCAAAAAAATCTT  
 GTTCAAAACAGGGAAAGACTGATGAAAAGTAAATGGACTACTTTTGTAACTTACCTGTTTGTAGGAAA  
 TGGAAATGGTCTCTTTGATTTAAATAAATAAATAAGATATTACGCTCTTTGTATTGAGACTGTATTGT  
 TATGAGCCTAGGAAATTTGGGAACATGATTGTATTGTATTAAATTCGAAGTGATTATTATCAGCTTAAT  
 TGGATTAAAAAAGTACTTCAAGAAATTTATTTTATCATATCTGCTTCTGTTTTTCCAAAAGGTTAAACTT  
 GTAAAAAATATATATAAACAATTGAGTTTACTAATGGTAAACATTTTTTATTCTGGGATTCCGTCATTG  
 GAATTTATATTAAGACAAGTTATTAATAAAGGAAAGGTTCTATTATAATCAGGGTAAAGAATATGAAA  
 ACCTTAGACGTAATCCATGGTGGATAGGCATTATGGTTTCCACTTTGGCAGAAGGCAGACTATTACAGC  
 CCTATTACTTACATAGGCTAAAAAATATGTAACATAATACCTAATGGTATTTAATTTTTGTTTATTGA  
 ATTTAAGAGATTGGTATTAGTTTTCATAGCTGTAGTCCATTCTAATAATTTCTGATCTTCTAGTGGCTAC  
 TTAATTAGACATTATTTGAAGCTGTCTGAAGAATGCCTTTATGAATTAATAAAGTGAATTGCCTGACCT  
 CGTTATCACATGAGCTTATATTTTGGGAACACATAGAAGTATGAGGCTTTTCTTAAGGCCAAGGATAA  
 TGTACTAGTTGTTAAATGGAATAAAGTGAAGTGTAAT

Human SPG20 mRNA sequence - var7 (public gi: 20070809) (SEQ ID NO: 373)

GGCGGCGCGTCTGTCGGGCTCTGTGGCGGAGCGAGGCCGCGGGCGGGCCGTGCGGCCGCGTGACGCG  
 GAAGCGTTGAGAGCGCGCGTCTGGAACGCTTGTGTGCCACGGCAAGCGCGCGCGAGGCGCTTGGGA  
 ACCTCGGACCGGCCCCCGGCGAGCGCAGCGCGCCAGTAGTCATCTTAGTGGGATTTGGGGAAGCAAC  
 AGGGCTGTGTGGGGTAACCTGCCACCTTTAAGTGGAATCAGAAATGGAGCAAGAGCCACAAAATGGAGA  
 ACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCTTTTTATTTGTTAAACAAAGGTCTGAAT  
 ACAGATGAATTAGGTCAGAAGGAAGAAGCAAGAACTACTATAAGCAAGGAATAGGACACCTGCTCAGAG  
 GGATCAGCATTTTCATCAAAAGAGTCTGAACACACAGGTCCTGGGTGGGAATCTGCTAGACAGATGCAACA  
 GAAAATGAAAGAACTCTACAGAATGTACGCACAGGCTGGAAATTTAGAGAAGGGTCTTGCCACTTCT  
 CTGCAGAATGATCTTCAGGAGGTGCCAAGTTATATCCAGAATTTCCACCTAAAGACATGTGTGAAAAAT  
 TACCAGAGCCTCAGTCTTTTAGTTCAGCTCCTCAGCATGCTGAAGTAAATGGAAACACCTCAACTCCAAG  
 TGCAGGGCAGTTGCTGCACCTGCTTCTGCTCTTACCATCACAAAGTTGTCCAGCAGAAGCTCCTCCT  
 GCTTATACTCCTCAAGCTGCTGAAGGTCACTACACTGTATCCTATGGAAACAGATTCTGGGGAGTTTTCAT  
 CAGTTGGAGAGGAGTTTTATAGGAATCATTTCTCAGCCACCGCCTCTTGAGACCTTAGGGCTGGATGAGA  
 TGAATTGATTTTGATACCAATGGAGTACAGATTTTTTTTGTAAATCTGCAGGGGAGGTTAGTGCACCT  
 TCGTATCCTGGGTACCTTCGAATTGTGAGGTTTTTGGATAATTCTCTCGATACGGTTCTAAACCGTCCTC  
 CCGGTTTCTTCAGGTTTGTGACTGGTTATATCCTCTAGTTCCTGATAGATCTCCGTTCTGAAATGTAC  
 TGCGGGAGCCTACATGTTTCTGATACAATGTCTACAAGCAGCAGGATGCTTTGTGGGGTCTGCTGTC  
 TCTGAGTTACCAGAGGATGATAGAGAGCTCTTGAGGATCTGTTAAGGCAAAATGTCTGACCTTCGGCTCC  
 AGGCCAACTGGAACAGAGCAGAAGAAGAAAATGAATCCAAATCCCTGGAAGAACTAGACCCTCCTCTGA  
 CCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACAGTTGGACCAAGGCAATAAGGATGTACGTCATAAA  
 GGAAACGTGGAAGAAAGGGCTAAAGATACTTCAAGTGAAGAAGTTAACCTGAGTCACATTGTACCATGTG  
 AGCCAGTTCCAGAAGAAAAGCCAAAAGAATTACCTGAATGGAGTGAAAAAGTGGCTCACAACATTTTGTG  
 AGGTGCTTCTGGGTGAGTTGGGGTTTAGTCAAAGGTGCTGAGATTACTGGTAAGGCAATCCAGAAAGGT  
 GCTTCTAAACTCCGAGAGCGGATTCAACCAGAAGAAAACCCGTGGAAGTTAGTCCAGCTGTACCAAGG  
 GACTTTATATAGCGAAGCAAGCTACAGGAGGAGCAGCAAAAGTCAGTCAGTTCCTGGTTGATGGAGTTTG

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CACTGTAGCAAATTGCGTTGGAAAAGAACTAGCTCCACATGTCAAGAAGCATGGAAGTCAAACCTGTTCC  
AGAATCTCTTAAAAAGACAAAGATGGGAAATCTCTCTGGATGGTGCTATGGTTGTAGCAGCAAGTAGT  
GTTCAAGGATTTTCAACTGTCTGGCAAGGATTGGAATGTGCAGCTAAATGCATCGTTAACAATGTTTCAG  
CAGAACTGTACAACTGTGAGATACAAATACGGATATAATGCAGGAGAAGCTACCCACCATGCGGTGGA  
TTCTGCGGTCAATGTTGGCGTAACTGCCTACAATATTAACAACATTGGTATCAAAGCAATGGTGAAGAAA  
ACTGCAACACAAACAGGACACACTCTCCTTGAGGACTATCAGATAGTTGATAATTCTCAGAGGGAAAATC  
AAGAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAAGGATGAGCAGACGAAGGAAGTAAAGGAGGCAAA  
GAAGAAAGATAAATGATGAAGTGCTGGGAATCACTTATACCAAAGCCTTATGAAATGGATGAAATTTTGT  
TAAATAGGCAAATGTGGAATTCCTCACAGATTAAACAGTATTTTTTAAATGTATTCTTCTACAAATTA  
ACTTTCATAAATTTTATGGCATGTCTTCTATTTAAAAGGAAAAGAATAAGTATTCTTGCATCTGGCCTTA  
GAAATGTGAAGTTATATTCTCAAGTTTATTTTTTCCAAGTGTAGCTAAAATATTTTTGCAGGTAAAATA  
AAGCTGATAGTACATGTGTGTTCAAACCTTGTTTAAACCTAATATTGAACATTTTTTATATCTGTGCT  
TTCAGAAGGCAAATAGGAACTATATATTGCTTAAAAATGGCATTAGTAACCTTAATTCTTTTTATA  
GAAGGAATGACTTAAAGTATTGTCCCTCTTTTGCACATAATTGTGGATTTTTTAGATGCTTCTCAAAA  
TTTTCAGTGTGTAAGCTAAACAAAACTAAACTAAGAATTCTCAAAAAAAGTGTCTCAAAAACAGGGAAA  
GACTGTGAAAAGTAAATGGACTACTTTTGTAACTTACCTGTTTGTAGGAAATGGAATGGTCTCTTTG  
ATTTAAATGAATAAAATAGATTATTACGTCTTTTGTATTGAGACTGTATTGTTATGAGCCTAGGAAAT  
TTGGGAACATGATTGTATTGTATTAAATTCGAAGTGATTATTATCAGCTTAATTGGATTAAAAAGTAC  
TTCAAGAAAAA

Human SPG20 mRNA sequence - var8 (public gi: 3043743) (SEQ ID NO: 374)

GCGGCCGCGCAGGGAGCTCTCGAGGCAACGCCGCGGGCGCCGAGGCTGGAAGGCGCAGAAATGGAGCAA  
GAGCCACAAAATGGAGAACCCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCCTTTTTATTG  
TTAACAAGGTCTGAATACAGATGAATTAGGTGAGAAGGAAGCAAGAACTACTATAAGCAGGAAT  
AGGACACCTGCTCAGAGGGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCCTGGGTGGGAATCT  
GCTAGACAGATGCAACAGAAAATGAAAGAACTCTACAGAAATGTACGCACCAGGCTGGAAATCTAGAGA  
AGGGTCTTGCCACTTCTCTGCAGAATGATCTTCAGGAGGTGCCAAGTTATATCCAGAATTTCCACCTAA  
AGACATGTGTGAAAAATACCAGAGCCTCAGTCTTTTAGTTCAGCTCCTCAGCATGCTGAAGTAAATGGA  
AACACCTCAACTCCAAGTGCAGGGGCGAGTTGCTGCACCTGCTTCTCTGTCTTTACCATCACAAAGTTGTC  
CAGCAGAAGCTCCTCCTGCTTATACTCCTCAAGCTGCTGAAGGTCACTACACTGTATCCTATGGAACAGA  
TTCTGGGGAGTTTTCATCAGTTGGAGAGGAGTTTATAGGAATCATTCTCAGCCACCGCCTCTTGAGACC  
TTAGGGCTGGATGCAGATGAATTGATTTTGATACCAATGGAGTACAGATTTTTTTGTAAATCCTGCAG  
GGGAGGTTAGTGACCTTCGTATCCTGGGTACCTTCGAATTGTGAGGTTTTTGGATAATTCTCTCGATAC  
GGTTCTAAACCGTCTCCCGGTTTCTTCAGGTTTGTGACTGGTTATATCCTCTAGTTCCTGATAGATCT  
CCGGTTCTGAAATGTACTGCGGGAGCCTACATGTTTCTGATACAATGCTACAAGCAGCAGGATGCTTTG  
TGGGGTCTGCTCCTGTCTCTGAGTTACCAGAGGATGATAGAGAGCTCTTTGAGGATCTGTTAAGGCAAA  
GTCTGACCTTCGGCTCCAGGCCAACTGGAACAGAGCAGAGAAGAAATGAATTCCAAATCCCTGGAAGA  
ACTAGACCTCCTCTGACCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACAGTTGGACCAAGGCAATA  
AGGATGTACGTCAATAAGGAAAACCTGGAAGAAAGGGCTAAAGATACTTCAAGTGAAGAAGTTAACCTGAG  
TCACATTGTACCATGTGAGCCAGTTCAGAGAAGAAAGCCAAAAGAATTACCTGAATGGAGTGAAAAGTG  
GCTCACAAATTTTGTGAGGTGCTTCTGGGTGAGTTGGGGTTTGTAGTCAAAGGTGCTGAGATTACTGGTA  
AGGCAATCCAGAAAGGTGCTTCTAACTCCGAGAGCGGATTCAACCAGAGAAGAAAACCCGTGGAAGTTAG  
TCCAGCTGTCACCAAGGACTTTATATAGCGAAGCAAGCTACAGGAGGAGCAGCAAAAGTCAGTCAGTTC  
CTGGTTGATGGAGTTTGCACCTGTAGCAAAATGCGTTGGTGAAGAACTAGCTCCACATGTCAAGAAGCATG  
GAAGCAAACTGTTCCAGAATCTCTTAAAAAGACAAAGATGGGAAATCTCCTCTGGATGGTGCTATGGT  
TGTAAGCAGCAAGTAGTGTTCAGGATTTTCAACTGTCTGGCAAGGATTGGAATGTGCAGCTAAATGCATC  
GTTAACAATGTTTTCAGCAGAACTGTACAACTGTGAGATACAAATACGGATATAATGCAGGAGAAGCTA  
CCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGTAACTGCCTACAATATTAACAACATTGGTATCAA  
AGCAATGGTGAAGAAAACCTGCAACACAAACAGGACACTCTCCTTGAGGACTATCAGATAGTTGATAAT  
TCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAAGGATGAGCAGACGAAG  
AAGTAAAGGAGGCAAGAAGAAAGATAAATGATGAAGTGCTGGGAATCACTTATACCAAAGCCTTATGAA  
ATGGATGAAATTTTGTAAATAGGCAAATGTGGAATTCCTCACAGATTAAACAGTATTTTTTAAATGTAT  
TCATTCCTACAAATTAACCTTTCATAAATTTTATGGCATGTCTTCTATTTAAAAGGAAAAGAATAAGTATT  
CTTGCACTCTGGCCTTAGAAAATGTGAAGTTATATTCTCAAGTTTATTTTTTCCAAGTGTAGCTAAAATAT  
TTTTGCAGGTAAAATAAAGCTGATAGTACATGTGTTGTTCAAACCTTGTAAACCTAATATGAACTATT  
TTTATATCTGCTGCTTTTTCAGAAGGCAAATAGGAACTATATATTTGCTTAAAAATGGCATTAGTAAC  
CTTAATTTCTTTTATAGAAGGAATGACTTAAAGTATTGTCCCTCTTTTGCACATAATTGTGGATTTTTT  
TAGATGCTTCTCAAATTTTCAGTGTGTAAGCTAAACAAAACTAAACTAAGAATTCTCAAAAAAAGTGT  
GTTCAAAAACAGGGAAGACTGATGAAAAGTAAATGGACTACTTTTGTAACTTACCTGTTTGTAGGAAA  
TGGAAATGGTCTCTTTGATTAAATGAATAAAATAGATTATTACGTCTTTTGTATTGAGACTGTATTGT  
TATGAGCCTAGGAAATTTGGGAACATGATTGTATTGTATTAAATTCGAAGTGATTATTATCAGCTTAAT  
TGGATTAAAAAGTACTTCAAGAAATTATTTTATCATATCTGCTTCTGTTTTTCCAAAAGGTTAAACTT  
GTAAAAAATATATATAACAATTGAGTTTACTAATGGTAAACATTTTTATTCTGGGATTCGGTCATTG

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GAATTTATATTAAAAGACAAGTTATTAAAAAGGAAAGGTTCTATTTCATAATCAGGGTAAAGAATATGAAA  
ACCTTAGACGTAATCCATGGTGGATAGGCATTATGTTTCCACTTTGGCAGAAGGCAGACTATTACAGC  
CCTATTACTTACATAGGCTAAAAAATATGTAATAAATACCTAATGGTATTTAATTTTTGTTTATTGA  
ATTTAAGAGATTGGTATTAGTTTTCATAGCTGTAGTCCATTCTAATAATTTCTGATCTTCTAGTGGCTAC  
TTAATTAGACATTATTTGAAGCTGTCTGAAGAATGCACTTTATGAATTAATAAACTGAATTGCTGACCT  
CGTTATCACATGAGCTTATATTTGGGAACACATAGAAGTGAAGGCTTTTCTAAGGCCAAGGATAA  
TGTAAGTGTGTTAAAAATGGAATAAAAGTGAAGTGGTAAAT

Human SPG20 protein sequence - var1 (public gi: 28436885) (SEQ ID NO: 386)

MEQEPQNGEPAEIKIIREAYKKAFLFVNKGLNTDELQKKEAKNYYKQIGHLLRGISISSKESEHTGTG  
WESARQMQQMKETLQNVTRLEILEKGLATSLQNDLQEVPKLYPEFPPKDMCEKLPEPQSFSSAPQHA  
VNGNTSTPSAGAVAAPASLSLPSQSCPAEAPPAYTPQAAGHYTVSYGTDSEGFSSVGEFFYRHSQPPP  
LETGLDADELILIPNGVQIFFVNPAGEVSAPSYPGYLRIVRFLDNSLDTVLNRPPGFLQVCDWLYPLVP  
DRSPVLKCTAGAYMFPDMLQAAGCFVGVVLSSELPEDDRELFDLLRQMSDLRLQANWNRAEEENEFOI  
PGRTRPSSDQLKEASGTDVKQLDQGNKDVRHKGKRGKRAKDTSSSEVNLSHIVPCEPVPEEKPKELHEWS  
EKVAHNILSGASWVSWGLVKGAETGKAIQKGASKLRERIQPEEKPEVSPAVTKGLYIAKQATGGAAGV  
SQFLVDGVCTVANCVGKELAPHVKKHGSKLVPESLKKDKDGKSPLDGAMVVAASSVQGFSTVWQGLECAA  
KCI VNNVSAETVQTVRYKYGYNAGEATHHAVD SAVNVGVTA YNNINIGIKAMVKKATQTGHTLLEDYQI  
VDNSQRENQEGAANVNRGEKDEQTEVKEAKKKDK

Human SPG20 protein sequence - var2 (public gi: 22074832) (SEQ ID NO: 387)

MEQEPQNGEPAEIKIIREAYKKAFLFVNKGLNTDELQKKEAKNYYKQIGHLLRGISISSKESEHTGPG  
WESARQMQQMKETLQNVTRLEILEKGLATSLQNDLQEVPKLYPEFPPKDMCEKLPEPQSFSSAPQHA  
VNGNTSTPSAGAVAAPASLSLPSQSCPAEAPPAYTPQAAGHYTVSYGTDSEGFSSVGEFFYRHSQPPP  
LETGLDADELILIPNGVQIFFVNPAGEVSAPSYPGYLRIVRFLDNSLDTVLNRPPGFLQVCDWLYPLVP  
DRSPVLKCTAGAYMFPDMLQAAGCFVGVVLSSELPEDDRELFDLLRQMSDLRLQANWNRAEEENEFOI  
PGRTRPSSDQLKEASGTDVKQLDQGNKDVRHKGKRGKRAKDTSSSEVNLSHIVPCEPVPEEKPKELPEWS  
EKVAHNILSGASWVSWGLVKGAETGKAIQKGASKLRERIQPEEKPEVSPAVTKGLYIAKQATGGAAGV  
SQFLVDGVCTVANCVGKELAPHVKKHGSKLVPESLKKDKDGKSPLDGAMVVAASSVQGFSTVWQGLECAA  
KCI VNNVSAETVQTVRYKYGYNAGEATHHAVD SAVNVGVTA YNNINIGIKAMVKKATQTGHTLLEDYQI  
VDNSQRENQEGAANVNRGEKDEQTEVKEAKKKDK

Human SPG20 protein sequence - var3 (public gi: 3043744) (SEQ ID NO: 388)

RPRRELSRQRRGARGLEGAEME QEPQNGEPAEIKIIREAYKKAFLFVNKGLNTDELQKKEAKNYYKQGI  
GHLLRGISISSKESEHTGPGWESARQMQQMKETLQNVTRLEILEKGLATSLQNDLQEVPKLYPEFPPK  
DMCEKLPEPQSFSSAPQHA EVNGNTSTPSAGAVAAPASLSLPSQSCPAEAPPAYTPQAAGHYTVSYGTD  
SEGFSSVGEFFYRHSQPPP LETGLDADELILIPNGVQIFFVNPAGEVSAPSYPGYLRIVRFLDNSLDT  
VLNRPPGFLQVCDWLYPLVPDRSPVLKCTAGAYMFPDMLQAAGCFVGVVLSSELPEDDRELFDLLRQ  
MSDLRLQANWNRAEEENEFOI PGRTRPSSDQLKEASGTDVKQLDQGNKDVRHKGKRGKRAKDTSSSEVNLS  
HIVPCEPVPEEKPKELPEWSEKVAHNILSGASWVSWGLVKGAETGKAIQKGASKLRERIQPEEKPEVSP  
AVTKGLYIAKQATGGAAGV SQFLVDGVCTVANCVGKELAPHVKKHGSKLVPESLKKDKDGKSPLDGAMV  
VAASSVQGFSTVWQGLECAAKCI VNNVSAETVQTVRYKYGYNAGEATHHAVD SAVNVGVTA YNNINIGIK  
AMVKKATQTGHTLLEDYQI VDNSQRENQEGAANVNRGEKDEQTEVKEAKKKDK

Unigene Name: WASF1 Unigene ID: Hs.75850

Human WASF1 mRNA sequence - var1 (public gi: 4507912) (SEQ ID NO: 375)

CTTCTCTTGCACTTGCGGATGATGAAGTGAATAACGATGAAAGAAAGCACATCCGATCTCAACATTCAC  
GTCCTGCCCTATAACCGATTAAATTAATTGATCCCCAGCTAGACTAGTGTGGAGAAATCAGCATGTTAAA  
ACAAGTGTGATGATAGCTGTTGGAGTAAAGTTGCAGTGGAGCTATGGCTGCAAAATCGTTAAATCTT  
CAAGGTGAAGTGGCACAAGGTTAATCTCAAGATGCCGCTAGTGAAAAGAAACATCGATCCTAGGCACTT  
GTGCCACACAGCACTGCCTAGAGGCATTAAGAATGAAGTGAATGTGTAACCAATATTTCTTGGCAAAT  
ATAATTAGACAACCTAAGTAGCCTAAGTAAATATGCTGAAGATATATTTGGAGAATTATTCAATGAAGCAC  
ATAGTTTTTCTTCAGAGTCAACTCATTGCAAGAAGCTGTGGACCGTTTATCTGTTAGTGTTACACAGCT  
TGATCCAAAGGAAGAAGAAATGTCTTTGCAAGATATAACAAATGAGGAAAGCTTTCCGAAGTTCTACAATT  
CAAGACCAGCAGCTTTTCGATCGCAAGACTTTGCCTATTCCATTACAGGAGACGTACGATGTTTGTGAAC  
AGCCTCCACCTCTCAATATACTCACTCCTTATAGAGATGATGGTAAAGAAGGTCTGAAGTTTTATACCAA  
TCCTTCGTATTTCTTTGATCTATGGAAGAAAAAATGTTGCAAGATACAGAGGATAAGAGGAAGGAAAG  
AGGAAGCAGAAGCAGAAAAATCTAGATCGTCTCATGAACCAGAAAAAGTGCCAAGAGCACCTCATGACA  
GGCGGCGAGAATGGCAGAAGCTGGCCCAAGGTCAGAGCTGGCTGAAGATGATGCTAATCTCTTACATAA  
GCATATTGAAGTGTCTAATGGCCAGCCTCTCATTTTGAAACAAGACCTCAGACATACGTGGATCATATG

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GATGGATCTTACTCACTTTCTGCCTTGCCATTTAGTCAGATGAGTGAGCTTCTGACTAGAGCTGAGGAAA  
GGGTATTAGTCAGACCACATGAACCACCTCCACCTCCACCAATGCATGGAGCAGGAGATGCAAAACCGAT  
ACCCACCTGTATCAGTTCTGCTACAGGTTTGATAGAAAATCGCCCTCAGTCACCAGCTACAGGCAGAACAA  
CCTGTGTTTGTGAGCCCCACTCCCCACCTCCTCCACCACCTCTTCCATCTGCCTTGTCAACTTCCTCAT  
TAAGAGCTTCAATGACTTCAACTCCTCCCCCTCCAGTACCTCCCCACCTCCACCTCCAGCCACTGCTTT  
GCAAGCTCCAGCAGTACCACACCTCCAGCTCCTCTTCAAGATTGCCCTGGAGTTCTTACCCAGCTCCT  
CCTCAATTGCACCTCCTCTAGTACAGCCCTCTCCACCAGTAGCTAGAGCTGCCCCAGTATGTGAGACTG  
TACCAGTTTCATCCACTCCCACAAGGTGAAGTTCAGGGGCTGCCTCCACCCCCACCACCGCTCCTCTGCC  
TCCACCTGGCATTTCGACCATCATCACCTGTACAGTTACAGCTCTTGCTCATCCTCCCTCTGGGCTACAT  
CCAATCCATCTACTGCCCCAGGTCCCCATGTTCCATTAATGCCTCCATCTCCTCCATCACAAGTTATAC  
CTGCTTCTGAGCCAAAGCGCCATCCATCAACCCTACCTGTAATCAGTGATGCCAGGAGTGTGCTACTGGA  
AGCAATACGAAAAGGTATTTCAGCTACGCAAGTAGAAGAGCAGCGTGAACAGGAAGCTAAGCATGAACGC  
ATTGAAAACGATGTTGCCACCATCCTGTCTCGCCGTATTGCTGTTGAATATAGTGATTGCGAAGATGATT  
CAGAATTTGATGAAGTAGATTGGTTGGAGTAAGAAAAATGCATTGATAAATATTACAAAAGTGAATGCAA  
ATGTCCTTTGTGGTGCTTGTTCCTTGAAAATGTTTGGTCATTCTAGTGTTTTGCTTTCTTTCTTATAA  
TAATGACCCCTTTTCTCCATAACTTTTGATTTCTAAGGAAAATATTAGCATACATTTCAAAGTAAATGT  
TTTACAGTGGCTTATCTTTTTCCTCCCTGAAAAGACTAATTTGGTCAAATAAACCACTAAGTATTAAG  
CATGGACAGCTGTTGTTAGAGTAGCAGATTGAGTTTTTGTATATATCTTAATTGTGTACTTTGTGAATTT  
TAATTTAAAGAAAGCAACTGAAATTGAAATCTTGAGGGCAGCTGTATCTACTAATGAGCCTTATTCCATT  
TCCTGATGTTTTAAAAGAAGAAACACTGCCTTGATTATACGAATACACTCAGAAAGTACATTTAGCTTGT  
AGTGTGAATTCTCTTAAAGGAATGCTTGAATTTTTCATTATTGTTTTATTGTTTTATATACTTGCCT  
TATTTGAATGTTTAGCAGTATCCCTTCCCACTTATATATTGTGTGATATGATTTTGCTTGCCTATAGGA  
GTTAAAACTTTTCCATGTGAATACTCTGACTTAAACATACATGTAACCTACATAACTGTTAAGAATAA  
CAGTCTGATTTAATAAATGGTTTCAATTTTAAAGTT.

Human WASF1 mRNA sequence - var2 (public gi: 4927209) (SEQ ID NO: 376)

ATGCCGCTAGTGAAAAGAAACATCGATCCTAGGCACCTTGTCACACAGCACTGCCTAGAGGCATTAAGA  
ATGAATGGAATGTGTAACCAATATTTCTTGGCAAATATAATTAGACAACCTAAGTAGCCTAAGTAAATA  
TGCTGAAGATATATTTGGAGAAATTATTCAATGAAGCACATAGTTTTTCTTCCAGAGTCAACTCATTGCAA  
GAACGTGTGGACCGTTTATCTGTTAGTGTTACACAGCTTGATCCAAAGGAAGAAGAAATTGTCTTTGCAAG  
ATATAACATGAGGAAAGCTTTCCGAAGTTCTACAATTCAAGACCAGCAGCTTTTCGATCGCAAGACTTT  
GCCTATTCCATTACAGGAGACGTACGATGTTTGTGAACAGCCTCCACCTCTCAATATACTCACTCCTTAT  
AGAGATGATGGTAAAGAAGGTCTGAAGTTTTATACCAATCCTTCGTATTTCTTTGATCTATGGAAGAAA  
AAATGTTGCAAGATACAGAGGATAAGAGGAAGGAAAGAGGAAGCAGAAGCAGAAAATCTAGATCGTCC  
TCATGAACCAGAAAAAGTGCCAAGAGCACCTCATGACAGGCGGCGAGAATGGCAGAAGCTGGCCCAAGGT  
CCAGAGCTGGCTGAAGATGATGCTAATCTCTTACATAAGCATATTGAAGTTGCTAATGGCCAGCCTCTC  
ATTTTGAAACAAGACCTCAGACATACGTGGATCATATGGATGGATCTTACTCACTTTCTGCCTTGCCATT  
TAGTCAGATGAGTGAGCTTCTGACTAGAGCTGAGGAAAGGGTATTAGTCAGACCACATGAACCACCTCCA  
CCTCCACCAATGCATGGAGCAGGAGATGCAAAACGATACCCACCTGTATCAGTTCTGTACAGGTTTGA  
TAGAAAATCGCCCTCAGTCACCAGCTACAGGCAGAACACCTGTGTTTGTGAGCCCCACTCCCCACCTCC  
TCCACCACCTCTTCCATCTGCCTTGTCAACTTCCTCATTAAAGAGCTTCAATGACTTCAACTCCTCCCCCT  
CCAGTACCTCCCCACCTCCACCTCCAGCCACTGCTTTGCAAGCTCCAGCAGTACCACCACCTCCAGCTC  
CTCTTCAGATTGCCCTGGAGTTCTTACCCAGCTCCTCCTCCAATTGCACCTCCTCTAGTACAGCCCTC  
TCCACCAGTAGCTAGAGCTGCCCCAGTATGTGAGACTGTACAGTTTCACTCCACCTGACCATCATCACTGTCA  
CAGTTACAGCTCTTGCTCATCTCCTCTGGGCTACATCCAACCTCCATCTACTGCCCCAGGTCCCCATGT  
TCCATTAATGCCTCCATCTCCTCCATCACAAGTTATACCTGCTTCTGAGCCAAAGCGCCATCCATCAACC  
TACCTGTAATCAGTGATGCCAGGAGTGTGCTACTGGAAGCAATACGAAAAGGTATTAGCTACGCAAAG  
TAGAAGAGCAGCGTGAACAGGAAGCTAAGCATGAACGCATTGAAAACGATGTTGCCACCATCCTGTCTCG  
CCGTATTGCTGTTGAATATAGTGATTCCGAAGATGATTTCAGAAATTTGATGAAGTAGATTGGTTGGAGTAA  
GAAAATGCATTGATAAATATTACAAAAGTGAATGCAATGTCCTTTGTGGTGCTTGTTCCTTGAAAATG  
TTTGGTCA

Human WASF1 protein sequence - var1 (public gi: 4507913) (SEQ ID NO: 389)

MPLVKRNIDPRHLCHTALPRGIKNELECVTNISLANIIRQLSSLSKYAEDIFGELFNEAHSFSFRVNSLQ  
ERVDRLSVSVTQLDPKEEELSLODITMRKAFRSSTIQDQQLFDRKTLPIPLQETVDVCEQPPPLNLTPT  
RDDGKEGLKFYTNPSYFFDLWKEKMLQDTEDEKREKQKQKQKNDLRPHPEKEKVPVPRAPHDRRREWQKLAQG  
PELAEDDANLHKHIEVANGPASHFETRPQTYYVDHMDGSYSLSALPFSQMSSELLTRAERVLVRPHEPPP  
PPPMHAGDAKPIPTCISSATGLIENRPQSPATGRTPVFSVPTPPPPPPPLPSALSTSSLRASMTSTPPP  
PVPPPPPPATALQAPAVPPPPAPLQIAPGVLPAPPPPIAPPLVQPSPPVARAAPVCETVPVHPLPQGEV  
QGLPPPPPPPLPPPGIRPSSPVTVTALAHPPSLHPTSTAPGPHVPLMPPSPPSQVIPASEPKRHPST  
LPVISDARSVLLAIRKGIQLRKVVEEQREQEAKHERIENDVATILSRRIAVEYSDSEDDSEFDEVDWLE

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Unigene Name: HIP-55 Unigene ID: Hs.183373

Human HIP-55 mRNA sequence - var1 (public gi: 6470260) (SEQ ID NO: 377)

ATGGCGGCGAACCTGAGCCGGAACGGGGCCAGCGCTGCAAGAGGCCTACGTGCGGGTGGTCACCGAGAAAGT  
CCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTGGCACAGGGGA  
GGGTGGCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCCTTCTGCAGAGTGAAG  
GACCCCAACTCTGGACTGCCCAAATTTGTCTCATCAACTGGACAGGCGAGGGCGTGAACGATGTGCGGA  
AGGGAGCCTGTGCCAGCCAGCTCAGCACCATGGCCAGCTTCTGAAGGGGGCCCATGTGACCATCAACGC  
ACGGGCGGAGGAGGATGTGGAGCCTGAGTGCATCATGGAGAAGGTGGCCAAGGCTTCAGGTGCCAACTAC  
AGCTTTCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCAGGCCCCAGTGGGCTCTGTGTACCAGA  
AGACCAATGCCGTGTCTGAGATTAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGCAGAGAAGGAGGA  
GGAGAACCCTCGGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCAGGAGCGCCGG  
GAGCGTGAGCTGCGTGAGGCTGCACGCGGGAGCAGCGCTATCAGGAGCAGGGTGGCGAGGCGAGCCCC  
AGAGGACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTCTGCCGTGCACCC  
GAGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCTCAGCCTGGCAAG  
CTGAGGAGCCCCCTTCTGCAGAAGCAGCTCACCAACCAGAGACCCACTTTGGCAGAGAGCCAGCTGCTG  
CCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCGGGCGCCAGCACTCTCCATGTCTGGTGCA  
GGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCCCCACTGGTG  
CAGCAGCAAGGTGCCGCTCTGAGCACATTGACCACCACATTCAGGGCCAGGGGCTCAGTGGGCAAGGGC  
TCTGTGCGCGTGCCCTGTACGACTACCAGGAGCCGACGACACAGAGATCTCCTTTGACCCCGAGAACCT  
CATCACGGGCATCGAGGTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGCCATTTTGGCATG  
TTCCTGCCAACTACGTGGAGCTCATTGAGTGAGGCTGAGGGCGGCCGCTAGACTAGTCTAGAGAAAAA  
C

Human HIP-55 mRNA sequence - var2 (public gi: 8885629) (SEQ ID NO: 378)

GAAGCTACAGCAGCGGCGCGGAGACTGCGGGGCGGGCCATGGCGGCGAACCTGAGCCGGAACGGGCCAGC  
GCTGCAAGAGGCCTACGTGCGGGTGGTCACCGAGAAGTCCCCGACCGACTGGGCTCTCTTTACCTATGAA  
GGCAACAGCAATGACATCCGCGTGGCTGGCACAGGGGAGGGTGGCCTGGAGGAGATGGTGGAGGAGCTCA  
ACAGCGGGAAGGTGATGTACGCCTTCTGCAGAGTGAAGGACCCCAACTCTGGACTGCCCAAATTTGTCTCT  
CATCAACTGGACAGCGTGAACGATGTGCGGAAGGAGCCTGTGCCAGCCAGCTCAGCACCATG  
GCCAGCTTCTGAAGGGGGCCCATGTGACCATCAACGCACGGGCGGAGGAGGATGTGGAGCCTGAGTGCA  
TCATGGAGAAGGTGGCCAAGGCTTCAGGTGCCAACTACAGCTTTCACAAGGAGAGTGGCCGCTTCCAGGA  
CGTGGGACCCCAAGCCCCAGTGGGCTCTGTGTACAGAAAGCAATGCCGTGTCTGAGATTAAAGGGTT  
GGTAAAGACAGCTTCTGGGCCAAAGCAGAGAAGGAGGAGGAGAACCGTCCGTGAGGAGGAAAAGCGGCGGG  
CCGAGGAGGCACAGCGGAGCTGGAGCAGGAGCGCCGGGAGCGGTGAGCTGCGTGAGGCTGCACGCCGGGA  
GCAGCGCTATCAGGAGCAGGGTGGCGAGGCCAGCCCCCAGAGGACGTGGGAGCAGCAGCAAGAAGTGCTT  
TCAAGGAACCGAAATGAGCAGGAGTCTGCCGTGCACCCGAGGGAGATTTTCAAGCAGAAGGAGAGGGCCA  
TGTCCACCACCTCCATCTCCAGTCTCAGCCTGGCAAGCTGAGGAGCCCCCTCCTGCAGAAGCAGCTCAC  
CCAACAGAGACCCACTTTGGCAGAGAGCCAGCTGCTGCCATCTCAAGGCCCAGGGCAGATCTCCCTGCT  
GAGGAGCCGCGGCCAGCACTCTCCATGTCTGGTGAGGCAGGAGAAGAGGAGGCTGTGTATGAGGAACCTC  
CAGAGCAGGAGACCTTCTACGAGCAGCCCCACTGGTGACAGCAGCAAGGTGCTGGCTCTGAGCACATTGA  
CCACCACATTACGGGCCAGGGGCTCAGTGGGCAAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCA  
GCCGACGACACAGAGATCTCCTTTGACCCCGAGAACCTCATCACGGGCATCGAGGTGATCGACGAAGGCT  
GGTGGCGTGGCTATGGGCCGGATGGCCATTTTGGCATGTTCCCTGCCAACTACGTGGAGCTCATTGAGTG  
AGGCTGAGGGCACATCTTGCCCTTCCCTCTCAGACATGGCTTCTTATGTCTGGAAGAGGAGGCTGGG  
AGTTGACATTACGACTCTTCCAGGAATAGGACCCCAAGTGAAGGATGAGGCCTCAGGGCTCCCTCCGGCT  
TGGCAGACTCAGCCTGTACCCCAATGCAGCAATGGCCTGGTGAATCCACACATCTTCTCTGCATCCC  
CCGACCTTCCCAGACAGCTTGGCTCTTGCCCTGCAGGATACTGAGCCAAGCCCTGCCTGTGGCCAAGC  
CCTGAGTGGCCACTGCCAAGCTGCGGGGAAGGGTCTGAGCAGGGGCATCTGGGAGGCTCTGGCTGCCTT  
CTGCATTATTGCTTTTCTTTTCTTTCTTCTTCTAAGGGGTGGTGGCCACCACTGTTTGAATGAC  
CCTTGGGAACAGTGAACGTAGAGAATTGTTTTTAGCAGAGTTTGTGACCAAAAGTCAGAGTGGATCATGGT  
GGTTTGGCAGCAGGGAATTTGTCTTGTGGAGCCTGCTCTGTGCTCCCCACTCCATTCTCTGTCCCTCT  
GCCTGGGCTATGGGAAGTGGGGATGCAGATGGCCAAGCTCCACCCCTGGGTATTCAAAAACGGCAGACAC  
AACATGTTCTCCACGCGGCTCAAAAAAAAAAAAAAAAAAAAAA

Human HIP-55 mRNA sequence - var3 (public gi: 8917572) (SEQ ID NO: 379)

ATGGCGGCGAACCTGAGCCGGAACGGGGCCAGCGCTGCAAGAGGCCTACGTGCGGGTGGTCACCGAGAAAGT  
CCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTGGCACAGGGGA  
GGGTGGCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCCTTCTGCAGAGTGAAG  
GACCCCAACTCTGGACTGCCCAAATTTGTCTCATCAACTGGACAGGCGAGGGCGTGAACGATGTGCGGA

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AGGGAGCCTGTTCCAGCCACGTGAGCACCATGGCCAGCTTCTGTAAGGGGGCCCATGTGACCATCAACGC  
ACGGGCCGAGGAGGATGTGGAGCCTGAGTGATCATGGAGAAGGTGGCCAAAGGCTTCAGGTGCCAACTAC  
AGCTTTACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCAGGCCCCAGTGGGCTCTGTGTACCAGA  
AGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGCAGAGAAGGAGGA  
GGAGAACCCTCGGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCAGGAGCGCCGG  
GAGCGTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCTATCAGGAGCAGGGTGGCGAGGCCAGCCCCC  
AGAGTACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTCTGCCGTGCACCC  
GAGGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCTCTCAGCCTGGCAAG  
CTGAGGAGCCCCCTTCTGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAGAGCCAGCTGCTG  
CCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCCGGCGCCAGCACTCCTCCATGTCTGGTGCA  
GGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCCCCCACTGGTG  
CAGCAGCAAGGTGCTGGCTCTGAGCACATTGACCACCATTCAGGGCCAGGGGCTCAGTGGGCAAGGGC  
TCTGTGCCCCGTGCCCTGTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACCCCGAGAACCT  
CATCAGGGGCATCGAGGTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGATGGCCATTTTGGCATG  
TTCCCTGCCAACTACGTGGAGCTCATTGAGTGA

Human HIP-55 mRNA sequence - var4 (public gi: 10121214) (SEQ ID NO: 380)

GGGGCGGGCCATGGCGGCGAACCTGAGCCGGAACGGGCCAGCGCTGCAAGAGGCCCTACGTGCGGGTGGTC  
ACCGAGAAGTCCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTG  
GCACAGGGGAGGGTGGCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCCTTCTG  
CAGAGTGAAGGACCCCAACTCTGGACTGCCCAAATTTGTTCTCATCAACTGGACAGGCGAGGGCGTGAAC  
GATGTGCGGAAGGGAGCCTGTTCCAGCCACGTGAGCACCATGGCCAGCTTCTTGAAGGGGGCCCATGTGA  
CCATCAACGCACGGGCGGAGGAGATGTGGAGCCTGAGTGATCATGGAGAAGGTGGCCAAGGCTTCAGG  
TGCCAACATCAGCTTTTCAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCAGGCCCCAGTGGGCTCT  
GTGTACCAGAAGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGCAG  
AGAAGGAGGAGGAGAACCGTCCGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCA  
GGAGCGCGGGGAGCGTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCTATCAGGAGCAGGGTGGCGAG  
GCCAGCCCCCAGAGTACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTCTG  
CCGTGCACCCGAGGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCCCTCA  
GCCTGGCAAGCTGAGGAGCCCCCTTCTGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAGAG  
CCAGCTGCTGCCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCCGGCGCCAGCACTCCTCCAT  
GTCTGGTGACGGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCC  
CCCACTGGTGACGACAGAAGTGTGGCTCTGAGCACATTGACCACCACATTACAGGGCCAGGGGCTCAGT  
GGGCAAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACC  
CCGAGAACCTCATCAGGGCATCGAGGTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGCCA  
TTTTTGGCATGTTCCCTGCCAACTACGTGGAGCTCATTGAGTGAGGCTGAGGGCACATCTTGCCCTTCCCC  
TCTCAGACATGGCTTCTTATGTCTGGAAGAGGAGGCTGGGAGTTGACATTGAGCACTCTTCCAGGAAT  
AGGACCCCCAGTGAGGATGAGGCCTCAGGGCTCCCTCCGGCTTGGCAGACTCAGCCTGTACCCGCAATG  
CAGCAATGGCCTGGTGATTCCCAACATCCTTCTGCACTCCCCGACCCCTCCAGACAGCTTGGCTCTTG  
CCCCTGACAGGATACTGAGCCAAGCCCTGCCTGTGGCCAAGCCCTGAGTGGCCACTGCCAAGCTGCGGGG  
AAGGGTCTTGAGCAGGGGCATCTGGGAGGCTCTGGCTGCCTTCTGCATTTATTGCTTTTTTCTTTTTT  
TCTTGCTTCTAAGGGGTGGTGGCCACCACTGTTTAGAATGACCCTTGGGAACAGTGAACGTAGAGAATTG  
TTTTTAGCAGATTGTGTACCAAGTCAGAGTGGATCATGGTGGTTTGGCAGCAGGGAATTTGCTTGTGTT  
GGAGCTGCTCTGTGCTCCCACTCCATTTCTCTGTCCCTCTGCCTGGGCTATGGGAAGTGGGGATGCAG  
ATGGCCAAGCTCCCAACCTGGGTATTCAAAAACGGCAGACACAACATGTTCTCCACGCGGCTCGCTCGA  
TGCCTGCAGGCCCAAGTGTGTGCTCAACTGATTCTGACTTCAGGAAAAGTAACACAGAGTGGCCTTGGC  
CTGTTGTCTTCCCTATTTTCTGTCCAGCTCATCCGTCTCTGAAGATAAATATGCTTTTGGAAAAA  
AAAAA

Human HIP-55 mRNA sequence - var5 (public gi: 10441969) (SEQ ID NO: 381)

GACCATCAACGCACGGGCGGAGGAGGATGTGGAGCCTGAGTGATCATGGAGAAGGTGGCCAAGGCTTCA  
GGTGCCAACCTACAGCTTTCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCAGGCCCCAGTGGGCT  
CTGTGTACCAGAAGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGC  
AGAGAAGGAGGAGGAGAACCGTCCGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAG  
CAGGAGCGCCGGGAGCTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCTATCAGGAGCAGGGTGGCG  
AGGCCAGCCCCCAAAGGAGCTGGGAGCAGCAGCAAGAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTC  
TGCCGTGCACCCGAGGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCTCT  
CAGCCTGGCAAGCTGAGGAGCCCTTCTCTGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAG  
AGCCAGCTGCTGCCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCCGGCGCCAGCACTCCTCC  
ATGCTCTGGTGACGAGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAG  
CCCCACTGGTGACGACGAAGGTGCTGGCTCTGAGCACATTGACCACCACATTACAGGGCCAGGGGCTCA  
GTGGGCAAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGA

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GCCGGCGCCAGCACTCCTCCATGTCTGGTGAGGCAGAGAGAGGAGGCTGTGTATGAGGAACCTCCAGAG  
 CAGGAGACCTTCTACGAGCAGCCCCACTGGTGACGAGCAAGGTGCTGGCTCTGAGCACATTGACCACC  
 ACATTAGGGGCCAGGGGCTCAGTGGGCAAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCAGCCGA  
 CGACACAGAGATCTCCTTTGACCCCCGAGAACCTCATCAGGGCATCGAGGTGATCGACGAAGGCTGGTGG  
 CGTGGCTATGGGCCGGATGGCCATTTTGGCATGTTCCCTGCCAACTACGTGGAGCTCATTGAGTGAGGCT  
 GAGGGCACATCTTGCCCTTCCCTCTCAGACATGGCTTCTTATTGCTGGAAGAGGAGGCTGGGAGTTG  
 ACATTAGCACTCTTCCAGGAATAGGACCCCCAGTGAGGATGAGGCTCAGGGCTCCCTCCGGCTTGGCA  
 GACTCAGCCTGTACCCCCAAATGCAGCAATGGCTGGTGAATCCACACATCCTTCTGCATCCCCCGAC  
 CCTCCAGACAGCTTGGCTCTTGCCCTGACAGGATACTGAGCCAAGCCCTGCCTGTGGCCAAGCCCTGA  
 GTGGCCACTGCCAAGCTGCGGGGAAGGGTCTGAGCAGGGGCATCTGGGAGGCTCTGGCTGCCTTCTGCA  
 TTTATTTGCCTTTTTCTTTTCTTGTCTTAAGGGTGGTGGCCACCACTGTTTAGAATGACCCCTTG  
 GGAACAGTGAACGTAGAGAATTGTTTTTAGCAGACTTGTGACCAAAGTCAGAGTGGATCATGGTGGTTT  
 GGCAGCAGGGAATTTGTCTTGTGGAGCCTGCTGTGCTCCCCACTCCATTTCTCTGTCTCCCTGTCCTG  
 GGCTATGGGAAGTGGGATGCAGATGGCCAAGCTCCACCCTGGGTATTCAAAAACGGCAGACACAACAT  
 GTTCTCCACGCGGCTCACTCGATGCCTGCAGGCCCCAGTGTGTGCTCAACTGATTCTGACTTCAGGAA  
 AAGTAACACAGAGTGGCCTTGGCCTGTTGTCTTCCCTATTTTCTGTCCAGCTCATCCGTGTCTCTGAA  
 GAACAAATATGCTTTTGGACCACGAAA

Human HIP-55 mRNA sequence - var8 (public gi: 21619482) (SEQ ID NO: 384)

CGGGCCATGGCGCGAACCTGAGCCGGAACGGGCCAGCGCTGCAAGAGGCCTACGTGCGGGTGGTCACCG  
 AGAAGTCCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTGGCAC  
 AGGGGAGGGTGGCTTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCTTCTGCAGA  
 GTGAAGGACCCCAACTCTGGACTGCCCAAATTTGTCTCATCAACTGGACAGGCGAGGGCGTGAACGATG  
 TCGGAAGGGGAGCCTGTGCCACCGTCAGCACCATGGCCAGCTTCTGAAGGGGCCCCATGTGACCAT  
 CAACGCACGGGCCGAGGAGGATGTGGAGCCTGAGTGCATCATGGAGAAGGTGGCCAAGGCTTCAGGTGCC  
 AACTACAGCTTTCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCAGGCCCCAGTGGGCTCTGTGT  
 ACCAGAAGACCAATGCCGTGTCTGAGATTAAGGGTGGTAAAGACAGCTTCTGGCCAAAGCAGAGAA  
 GGAGGAGGAGAACCGTGGCTGGAGGAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCAGGAG  
 CGCCGGGAGCGTGAGCTGCGTGAGGCTGCACGCGGAGCAGCGCTATCAGGAGCAGGGTGGCGAGGCCA  
 GCCCCAGAGGACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTCTGCCGT  
 GCACCCGAGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCTCAGCCT  
 GGCAAGCTGAGGAGCCCCCTTCTGCAGAACGAGCTCACCCAACAGAGACCCACTTTGGCAGAGAGCCAG  
 CTGCTGCCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCCGGCGCCAGCACTCCTCCATGTCT  
 GGTGCAGGCAAGAGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCCCCCA  
 CTGGTGACGACGAAGGTGCTGGCTCTGAGCACATTGACCACCACATTGAGGGCCAGGGGCTCAGTGGGC  
 AAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACCCCGA  
 GAACCTCATCAGGGCATCGAGGTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGCCATTTT  
 GGCATGTTCCCTGCCAACTACGTGGAGCTCATTGAGTGAGGCTGAGGGCACATCTTGCCCTTCCCTCTC  
 AGACAGGCTTCTTATTGCTGGAAGAGGAGGCTGGGAGTTGACATTGAGCACTCTTCCAGGAATAGGA  
 CCCCCAGTGAGGATGAGGCCTCAGGGCTCCCTCCGGCTTGGCAGACTCAGCCTGTACCCCCAAATGACGC  
 AATGGCCTGGTGATTCCACACATCCTTCTGCATCCCCGACCCCTCCAGACAGCTTGGCTCTTGCCCC  
 TGACAGGATACTGAGCCAAGCCCTGCTGTGGCCAAGCCCTGAGTGGCCACTGCCAAGCTGCGGGGAAGG  
 GTCCTGAGCAGGGGCAATTTGGGAGGCTCTGGCTGCCTTCTGCATTTATTTGCCCTTTTTTCTTTTCTCTT  
 GCTTCTAAGGGGTGGTGGCCACCACTGTTTAGAATGACCCTTGGGAACAGTGAACGTAGAGAATTGTTTT  
 TAGCAGAGTTTGTGACCAAAGTCAGAGTGGATCATGGTGGTTTGGCAGCAGGGAATTTGTCTTGTGGAG  
 CCTGCTCTGTGCTCCCCACTCCATTTTCTGTCCCTCTGCTGGGCTGTGGGAAGTGGGGATGCAGATGG  
 CCAAGCTCCCCCTGGGTATTCAAAAACGGCAGACACAACATGTTTCTCCACGCGGCTCACTCGATGCC  
 TGCAGGCCCCAGTGTGTGCTCAACTGATTCTGACTTCAGGAAAAGTAACACAGAGTGGCCTTGGCCTGT  
 TGTCTTCCCTAAA

Human HIP-55 mRNA sequence - var9 (public gi: 23959038) (SEQ ID NO: 385)

GGCACGAGGATTTGACACATGAATGTATAGCAGTCATTGGGAACTCCACAGCTCATGTTTTCTCATAG  
 TAGATGTGTGCTCCCATCTCCATGGCTTTGTCCCTCACAACCCCCACCCCATGGTAAGTCAGGCCAGTGT  
 CCTCCAGCTGCAGAGCTGAGAAGGCTGCACAGTTGCCTACTGAGAACCTGCCTAGTGGGTGAGAGCAAA  
 GTGAGAACGGGCTGTGCCCCACCCACAGTGTTACTGTGAGCCCAAGCTCTTTGGGATGTAGTGAAAGTC  
 ATGGTGGATACGGGTAGGAGAGATGGAACCCAGGTCTGCTACAGAGCTCACTTGTGTTTCGTTTCAG  
 GGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTGGCACAGGGGGTGAGTATGACTCC  
 AAATGGAAGTCAAGGACACCAGAGGTAGGAGGGTGACGACGAGGGGTGAGCGCACTCAGCTGTCTTGGTC  
 CACTGAGCCACATGGGGCTTCCAGTGCTCACTGGCCACTTCTGGCAGGCTTAGGTTTCAGATATGTGTA  
 AGTGAACAACTTCTCCTTGGTTCTCCTTCCCTCTGGGTGACGGGGAGTGCTTTCTTTGTCTACTTGG  
 GGAGAGCTGAGAGGGAACAGGCCTCTCCAGCTTGTGGGAGCCTGCGTTGGGAGCTGCGGTGGGAAGCT  
 CACAGTCCAGAACTGGTGCTGGTGAAAGAAAGTCCACAGACATATCTTCTCTCCCTTTGTCTCTGCTG

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CTGGTCTTGTGCCGAGTGCTTGACAGGGGCCCATCTCACTGGGAGAGGCAGTATCACTGCAGATAGTCA  
CGGGGGAGGCTCTGGAGGTCTCTACAGGAAGGACAGGCTCTTGGCCAGCACAGAGCAGAGGTTGTACGGG  
TAGGCTTCGTAGAGTGTGACCTGTGGGGCCCCCTCAGCTGACACCCGTGACTGCTCCTCCTCCAGAAGTTG  
CCTGACCCCTCCCTCTGTCTGAGCTGGACATGGCTTCATTGTTCAATGAACACTCGGAGTGGTTCTCCA  
CGGTTTGATGTCTGTTGTTGTTGAGAAAGCCCCCTCTTTTACAATCTTTCTGGGAGGTGTCCCTTTCTA  
GAAGGATTGCCATTGAACAGTAGACATGTGGTGTGGCAGGTGACTGGGAGTTGCAGAGATACAACAACTTG  
AGAGTTTCTGTGATCCCCAGTGGCACAGGACAGGGCTCTGCCACAAATGCAACAATTTGCTGTCCCCAG  
AGTGGGGCTCATGACTGCCTCACTCATACGGAGCCCTGTAGATGAAATACCTGATCAGCTCTTCTCCT  
TATAACTCTGGAAAGTTTGTGAGGGCTAAGCCTCAGTGTGAGGAGAATTGTTTAGAGCTGCCACTCCT  
GTGCTCCCCCTGTCCCCACTACCCCTCTCTTCTGGAGTCTGAGGACTGAGCCAGTTACGCCACTGCGAGT  
GTTCAATCTGGTCTGGCCGTCTGGGTGGCCCTGGAACCTTGAGCAGACACAGGTGCAGGCAGTGGTGACTC  
TACAGGCCCTGCTATTCCGGGGCCCTTTTGCAACGTTGTGGCAACAATAAAATTTTGACGTAGCCATCCTC  
CATTGTGAAGTCTGGTGGCTGGTTTGCCGTGGAAATGACCCTGTTTTTATTTCAGAAATTACCTCTGGGT  
TTAGAGAAGTGGTTTAAACAGAGTGTGGGTAATAAAATTTACCTGAGGTACTTGTGAGAATTCGACAGACTT  
CTAGGTCCCACCCAGTCTCATCACTGAGTTAGTGGAGGTGGTGCCACGAGGACTCTGATTTTAAACATAC  
CCCTAGAAAGATTCTGATACAGGTAGAGGTGAGAAGCCCTGGTTTGTAAGCAGCTCGCCCTCCTTTCATG  
GTGGGACCAGGGCCAGCAGGGAATGTGAGGGCCACCCCTGACCTTCACTGTGACTCTGCTGCAGAGGGTG  
GCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCCTTCTGCAGAGTGAAGGACCC  
CAACTCTGGACTGCCCAAATTTGTGCTCTCATCACTGGACAGGGCAGGGCGTGAACGATGTGCGGAAGGGA  
CGCTGTGCCAGCCACCTGACACCATGTCAGCTTCTGTAAGGGGCCATGTGACCATCAACGCACGGG  
CCGAGGAGGATGTGGAGCCTGAGTGCATCATGAGAAGGTGGCCAAAGCTTCAGGTGCCAACTACAGCTT  
TCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCAGGCCCCAGTGGGCTCTGTGTACCAGAAGACC  
AATGCCGTGTCTGAGATTTAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGCAGAGGTGAGTGTGCC  
CGGGGCATCTGGGCACGCTGGGAGTGTGCTGCTGTGGCTCATCTTTCTCAAGTGTGAGCTCATGC  
AGCATCACTCTCCTTGTGCCATTACAGTAGGTACACTGAGCTCGGTAAGTTAAGCCACAAGGCT  
AATGATCGACTGGCTCTGGTGCCCGTCTTTGGCCATGTGCCTAAAACTCAGTCTCGGCGAGGGGATTAGG  
CTGAAGTGGCAGCATAGGGCTGAGCGGGCAGTGGCTCTCCCTGCAGAAGGAGGAGGAGAACCCTCGGCTG  
GAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCAGGAGCGCCGGGAGCGTGAGCTGCGTG  
AGGCTGCACGCGGGGAGCAGCGCTATCAGGAGCAGGGTGGCGAGGCCAGCCCCAGAGGACGTGGGAGCA  
GCAGCAAGAAGTGTTTCAAGGAACCGAAATGAGCAGGAGTCTGCCTGCAACCCGAGGAGATTTTCAAG  
CAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCTCAGCCTGCGCAAGCTGAGGAGCCCCCTCC  
TGCAGAAGCAGCTCACCCAACAGAGACCCACTTTGGCAGAGAGCCAGCTGCTGCCATCTCAAGGCCAG  
GGCAGATCTCCCTGCTGAGGAGCCGGCGCCAGCACTCCTCCTATGTCTGGTGCAGGCAGAAGAGGAGGCT  
GTGATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCCCCACTGGTGACGACAGAAGGTGCTG  
GCTCTGAGCAATTGACACCACATTACAGGGCCAGGGCTCAGTGGGCAAGGGCTCTGTGCCCTGCCCT  
GTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACCCCCGAGAACCCTATACGGGCATCGAG  
GTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGATGGCCATTTTGGCATGTTCCCTGCCAACTACG  
TGGAGCTCATTGAGTGAGGTGAGGGCAGCTCTTGCCCTTCCCTCTCAGACATGGCTTCTTATTGCTG  
GAAGAGGAGGCTGGGAGTTGACATTGACACTTCTCCAGGAATAGGACCCCCAGTGGAGGATGAGGGCTC  
AGGGCTCCCTCCGGCTGGCAGACTCAGCCTGTCAACCCAAATGACGAATGGCCTGGTGATTCCACAC  
ATCCTTCTGTCATCCCCCGACCTCCAGACAGCTTGGCTCTTGCCCTGACAGGATACTGAGCCAAAGCC  
CTGCCTGTGGCCAAGCCCTGAGTGGCCACTGCCAAGCTGCGGGGAAGGGTCTGTGACAGGGGCATCTGGG  
AGGCTCTGGCTGCCTTCTGCATTTATTGCTCTTTTCTCTTTTCTCTTGTCTTAAAGGGGTGGTGGCCAC  
CACTGTTTGAAGTACCTTGGGAACAGTGAACCTGAGAAATTGTTTGTAGCAGATTGTGTGACCAAAGT  
CAGAGTGGATCATGGTGGTTTGGCAGCAGGGAATTGTCTGTGTGGAGCTGCTGTGCTCCCCACTCC  
ATTTCTCTGTCCCTCTGCCTGGGCTATGGGAAGTGGGGATGCAGATGGCCAAGCTCCCACCCTGGGTATT  
CAAAAACGGCAGACACAACATGTTCTCCACGCGGCTCACTCGATGCCGTGCAGGCCCCAGTGTGTGCCCTC  
AAGTATTCTGACTTTCAGGAAAAGTAAACACAGAGTGGCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA  
AAAAAAAAAAAA

Human HIP-55 protein sequence - var1 (public gi: 21619483) (SEQ ID NO: 390)  
MAANLSRNGPALQEAYVRVVTESPTDWALFTYEGNSNDIRVAGTGEGGLEEMVEELNSGKVMYAFCRVK  
DPNSGLPKFVLINWTGEGVNDVRKGACASHVSTMASFLKGAHVTTINARAEDVEPECIMEKVAKASGANY  
SFHKESGRFQDVGPPQAPVGSVYQKTNVSEIKRVGKDSFWAKAEKEEENRRLEEKRAEEAQRQLEQERR  
ERELREAAREQRYQEQQGEASPORTWEQQQEVVSRNRNEQESAVHPREIFKQKERAMSTTSISSPQPGK  
LRSPFLQKQLTPETHFGREPAAAISRPRADLPAEPPAPSTPCLVQABEEAVVEEPPQEETFYEQPPLV  
QQQAGSSEHIDHHIIQQQGLSGQGLCARALYDYQAADDTETISFDPENLITGIEVIDEGWWRGYGPDGHFGM  
FPANYVALIE

Human HIP-55 protein sequence - var2 (public gi: 15079723) (SEQ ID NO: 391)  
MAANLSRNGPALQEA YVRVTEKSP TDWALFTYEGNSNDIRVAGTGGGLEEMVEELNSGKVMYAFCRVK  
DPNSGLPKFVLINW TGEGVNDVRKGACASHVSTMASFLKGAHVTINARAEDVEPECIMEKVAKASGANY

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SFHKESGRFQDVGPQAPVGSVYQKTNVSEIKRVGKDSFWAKAEKEEENRRLEEKRRAEAAQRQLEQERR  
ERELREAAARREQRYQEQGGEASQSRWEQQQEVVSRNRNEQESAVHPREIFKQKERAMSTTSISSPQPG  
KLRSFPFLQKQLTQPTHFGREPAAAI SRPRADLPAEEPAPSTPPCLVQAEAAEAVYEEPPPEQETTFYEQPPL  
VQQQGAGSEHIDHHIQGQGLSGQGLCARALYDYQAADDTEISFDPENLITGIEVIDEGWWRGYGPDGHFG  
MFANYVELIE

Human HIP-55 protein sequence - var3 (public gi: 14041996) (SEQ ID NO: 392)  
MAANLSRNGPALQEAYVRVTEKSPDWDALFTYEGNSNDIRVAGTGEGGLEEMVEELNSGKVMYAFCRVK  
DPNSGLPKFVLINWTGEGVNDVRKGACASHVSTMASFLKGAHVTINARAEEDVEPECIMEKVAKASGANY  
SFHKESGRFQDVGPQAPVGSVYQKTNVSEIKRVGKDSFWAKAEKEEENRRLEEKRRAEAAQRQLEQERR  
ERELREAAARREQRYQEQGGEASQSRWEQQQEVVSRNRNEQGSTCASLQESAVHPREIFKQKERAMSTT  
SISSPQPGKLRSFPFLQKQLTQPTHFGREPAAAI SRPRADLPAEEPAPSTPPCLVQAEAAEAVYEEPPPEQ  
TFYEQPPLVQQQGAGSEHIDHHIQGQGLSGQGLCARALYDYQAADDTEISFDPENLITGIEVIDEGWWRG  
YGPDGHFGMFANYVELIE

Human HIP-55 protein sequence - var4 (public gi: 10441970) (SEQ ID NO: 393)  
MEKVAKASGANYSFHKESGRFQDVGPQAPVGSVYQKTNVSEIKRVGKDSFWAKAEKEEENRRLEEKRR  
EEAQRQLEQERRERELREAAARREQRYQEQGGEASQRTWEQQQEVVSRNRNEQESAVHPREIFKQKERAM  
STTSISSPQPGKLRSFPFLQKQLTQPTHFGREPAAAI SRPRADLPAEEPAPSTPPCLVQAEAAEAVYEEPP  
EQETTFYEQPPLVQQQGAGSEHIDHHIQGQGLSGQGLCARALYDYQAADDTEISFDPENLITGIEVIDEGW  
WRGYGPDGHFGMFANYVELIE

Human HIP-55 protein sequence - var5 (public gi: 10121215) (SEQ ID NO: 394)  
MAANLSRNGPALQEAYVRVTEKSPDWDALFTYEGNSNDIRVAGTGEGGLEEMVEELNSGKVMYAFCRVK  
DPNSGLPKFVLINWTGEGVNDVRKGACSSHVSTMASFLKGAHVTINARAEEDVEPECIMEKVAKASGANY  
SFHKESGRFQDVGPQAPVGSVYQKTNVSEIKRVGKDSFWAKAEKEEENRRLEEKRRAEAAQRQLEQERR  
ERELREAAARREQRYQEQGGEASQSTWEQQQEVVSRNRNEQESAVHPREIFKQKERAMSTTSISSPQPGK  
LRSPFLQKQLTQPTHFGREPAAAI SRPRADLPAEEPAPSTPPCLVQAEAAEAVYEEPPPEQETTFYEQPPLV  
QQQGAGSEHIDHHIQGQGLSGQGLCARALYDYQAADDTEISFDPENLITGIEVIDEGWWRGYGPDGHFGM  
FPANYVELIE

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